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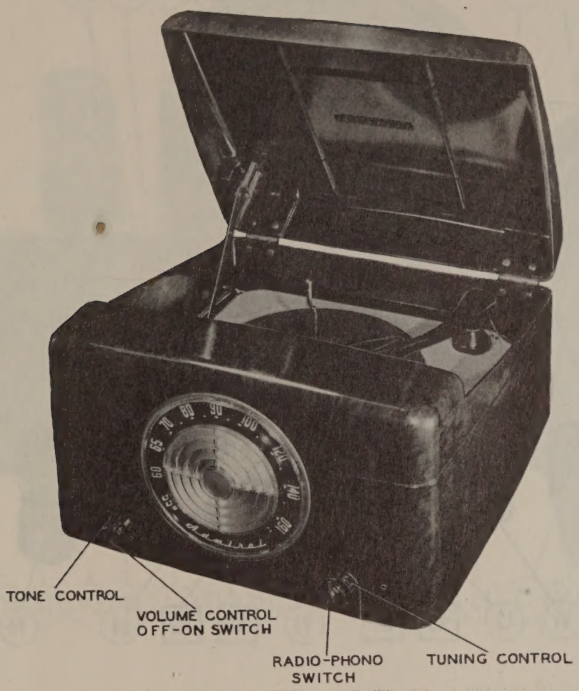

ADMIRAL
CHASSIS 6S1

ADMIRAL MODEL 6S12

TRADE NAME	Admiral, Models 6S11, 6S12 (Ch. 6S1)
MANUFACTURER	Admiral Corp., 3800 W. Cortland St., Chicago, Illinois
TYPE SET	AC Operated Combination Phono-Radio Superheterodyne Receiver with Loop Antenna
TUBES (SIX)	Types 12BA6 RF Amp.-Mixer, 12J5GT Oscillator, 12SK7 IF Amp., 12SQ7 DET-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .24 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1620KC — RECORD CHANGER -- ADMIRAL MODEL RC-500

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	250MMFD	High side to pin 1 (Grid) of 12BA6 (V1). Low side to chassis.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	250MMFD	"	1620KC	"	"	A5	Adjust for maximum output.
3.	TO SET POINTER TURN TUNING GANG TO 1400KC SIGNAL FROM SIGNAL GENERATOR AND SET POINTER IN HORIZONTAL POSITION POINTING TO THE RIGHT.						
4.		Loop	1400KC	Tune for max. output	Across voice coil	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ADMIRAL MODEL 6S12

ITEM No.	USE	REPLACEMENT DATA: ADMIRAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.-Mixer	12BA6	12BA6	7BK	
V2	Oscillator	12J5GT	12J5GT	6Q	
V3	IF Amp.	12SK7	12SK7	8N	
V4	DET-AVC-AF	12SQ7	12SQ7	8Q	
V5	Power Output	35L6GT	35L6GT	7AC	
V6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ADMIRAL PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	150	67A14-1	PRS150/30-30-30		EDL43215		TVA-3444	Filter-Yellow
B	30	150		PRS25/25		BR202A		TVA-1205	Filter-Red
C	20	150							Filter-Blue
D	20	25							Output Cath. -Green
C2	.1	200	64B1-30	P288-1	DF-104	PTE4P1		2TM-2	AVC Filter
C3	5000		65A10-1	BPD-005	DD-502	1D5D5	811-005	29C1	Mixer Cathode
C4	50		65B6-4	SI50	D6-500	5W5Q5	GP1K-50	19C28	Osc. Grid Cap.
C5	.05	400	64B1-22	P488-05	DF-503	PTE4S5		4TM-15	Tuning Cap. Isolation
C6A	100		63A3-1 *	SI100	PC-50 *	5W5T1	GP1K-100	19C11	Diode RF Filter
B	100			SI100		5W5T1	GP1K-100	19C11	Diode RF Filter
C7	500		65B6-6	SI500	D6-501	5W5T5	GP2K-500	19C32	Tone Compensation
C8	.01	400	64B1-25	P488-01	D6-103	PTE4S1	811-01	4TM-11	Tone Compensation
C9	.002	600	64B1-14	P688-002	D6-202	PTE6D2	GP2M-002	6TM-22	Tone Compensation
C10	.01	400	64B1-25	P488-01	D6-103	PTE4S1	811-01	4TM-11	Audio Coupling
C11	.1	200	64B1-30	P288-1	DF-104	PTE4P1		2TM-1	AF Amp. Plate Dec.
C12	.01	400	64B1-25	P488-01	D6-103	PTE4S1	811-01	4TM-11	Audio Coupling
C13	.03	400	64B1-23	P488-03		PTE6S3		6TM-13	Output Plate Byp.
C14	.1	200	64B1-30	P288-1	DF-104	PTE4P1		2TM-1	Phono Isolation
C15	.18	200	64A2-2	P488-22		GT4P2		72P53	Line Isolation
C16	.05	400	64B1-22	P488-05	DF-503	PTE4S5		4TM-15	Line Filter

* Items C6A, C6B and R4 are combined into one unit.
† Used only in sets with model numbers ending in "UL"

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ADMIRAL PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	2 Meg.	½	75B11-8	Concentrikit			
B	1 Meg.			B11-139 *			Tone control-front
C	Shaft End			B19-137X *			Volume control tapped at 500KΩ-rear
D	Switch			E-202 *			Attach per instr. in "Concentrikit"
				76-1 *			Attach per instr. in "Concentrikit"

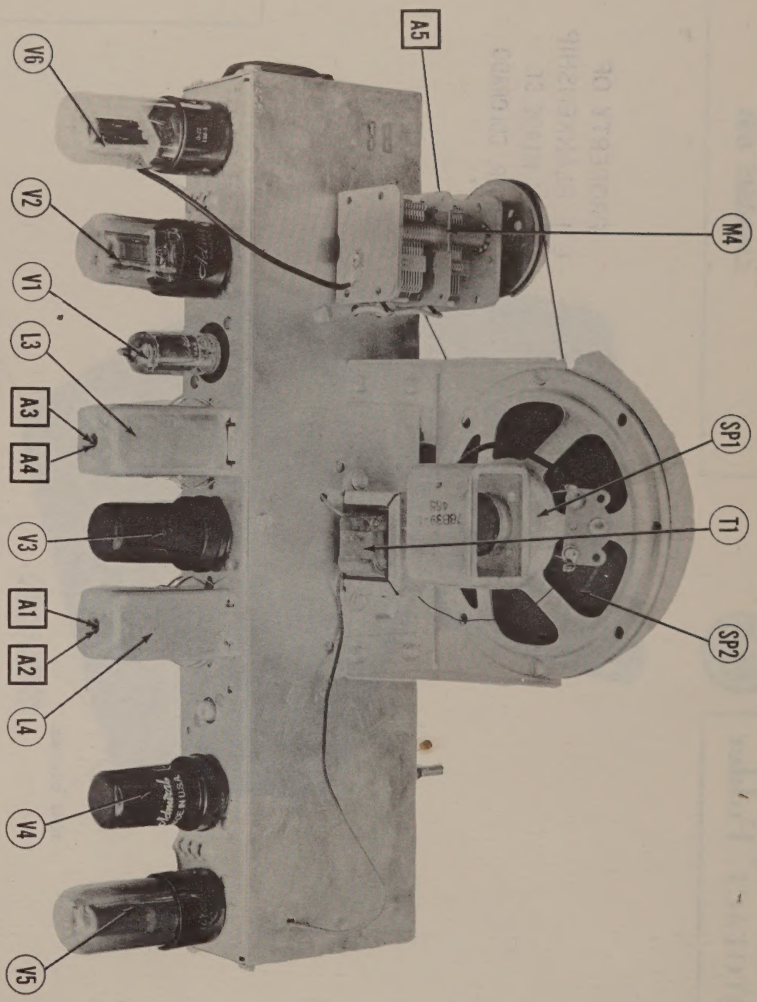
* Additional parts to be used with "Concentrikit".

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ADMIRAL PART No.	IRC PART No.	IDENTIFICATION CODES
R2	1600Ω	½	60B7-162	BTS-1500	Mixer Cathode
R3	40KΩ	½	60B8-473	BTS-39K	Osc. Grid-See Note 1
R4	47KΩ	½	†	BTS-47K	Diode Filter
R5	1 Meg.	½	60B8-105	BTS-1 Meg.	AVC Network
R6	4.7 Meg.	½	60B8-475	BTS-4.7 Meg.	AF Amp. Grid
R7	470KΩ	½	60B8-474	BTS-470K	AF Amp. Plate
R8	47KΩ	½	60B8-473	BTS-47K	AF Amp. Plate Decoupling
R9	470KΩ	½	60B8-474	BTS-470K	Output Grid
R10	150Ω	1	60B14-151	BTA-150	Output Cathode
R11	27KΩ	½	60B8-273	BTS-27K	Tone Compensation
R12	150KΩ	½	60B8-154	BTS-150K	Isolation
R13	1000Ω	1	60B28-2	BTA-1000	Filter
R14	220Ω	1	60B28-7	BTA-220	Filter
R15	33Ω	1	60B28-3		Surge Limiter
R16	8000Ω	½		BTS-8200	Osc. Grid-See Note 2

† Items R4, C6A and C6B are combined into one unit. See C6A and C6B under capacitor listings for replacement part numbers.
Note 1. Some models use a 47KΩ resistor in this application.
Note 2. Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ADMIRAL PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2200Ω	4.3Ω	205Ω	.5Ω	79A11-4	A-3876	A-2928	RO-2	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			ADMIRAL PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-105		
SP1	PM	4.3Ω	78B39-1	MOD. P5-X	5A07	
	CONE DIA.	V. C. DIA.				
SP2	4 3/4"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	ADMIRAL PART No.	MEISSNER PART No.	
L1	Loop Ant.	.8Ω		69C118		Includes trimmer
L2	Osc. Coil	6.6Ω		69A113-1	14-1060	Taps at 4Ω and 5.9Ω
L3	1st IF	24Ω	24Ω	72B50	16-6658	
L4	2nd IF	24Ω	24Ω	72B51	16-6660	

PHONO CARTRIDGE and NEEDLE

ITEM No.	REPLACEMENT DATA					REMARKS
	ADMIRAL PART No.	ASTATIC PART No.		SHURE PART No.		
		CARTRIDGE	NEEDLE	CARTRIDGE	NEEDLE	
M1	409A13	AC-AG-J	A-AG	W26B	A66U	

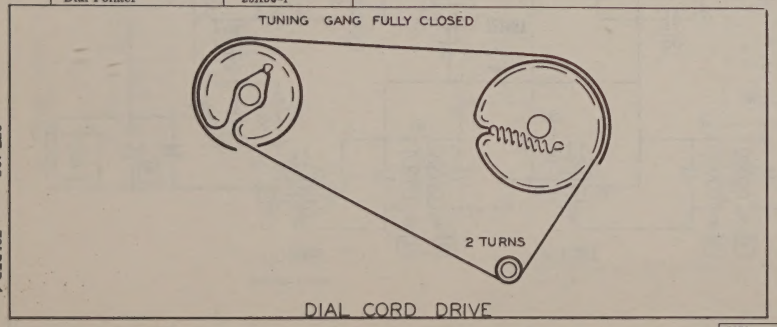
ASTATIC AND SHURE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ADMIRAL PART No.		
M2	Bayonet	6-8	.15	Brown	81A1-8		Type #47.

MISCELLANEOUS

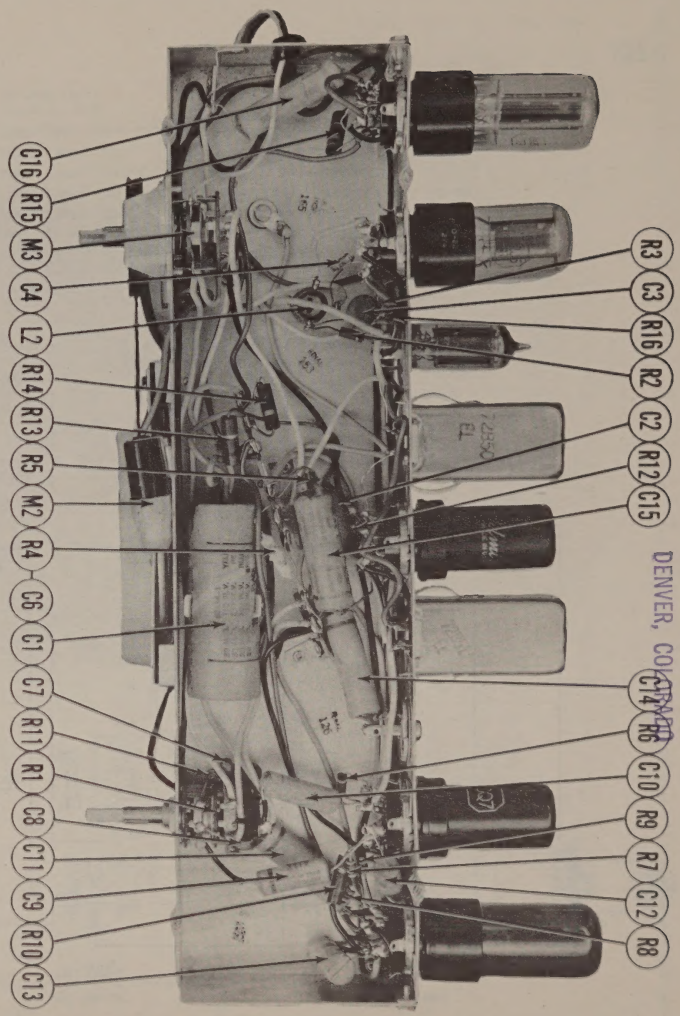
ITEM No.	PART NAME	ADMIRAL PART No.	NOTES
M3	Switch	77A28-1	Radio-Phono
M4	2 Gang Var. Cap.	68B30	(12-449MMF, 19-152MMF)
	Cabinet	34D28-3	Model 6S11
	Cabinet	34D28-5	Model 6S12
	Dial Pointer	25A35-1	



SET 107 FOLDER 1

ADMIRAL MODEL 6S12

CHASSIS—BOTTOM VIEW



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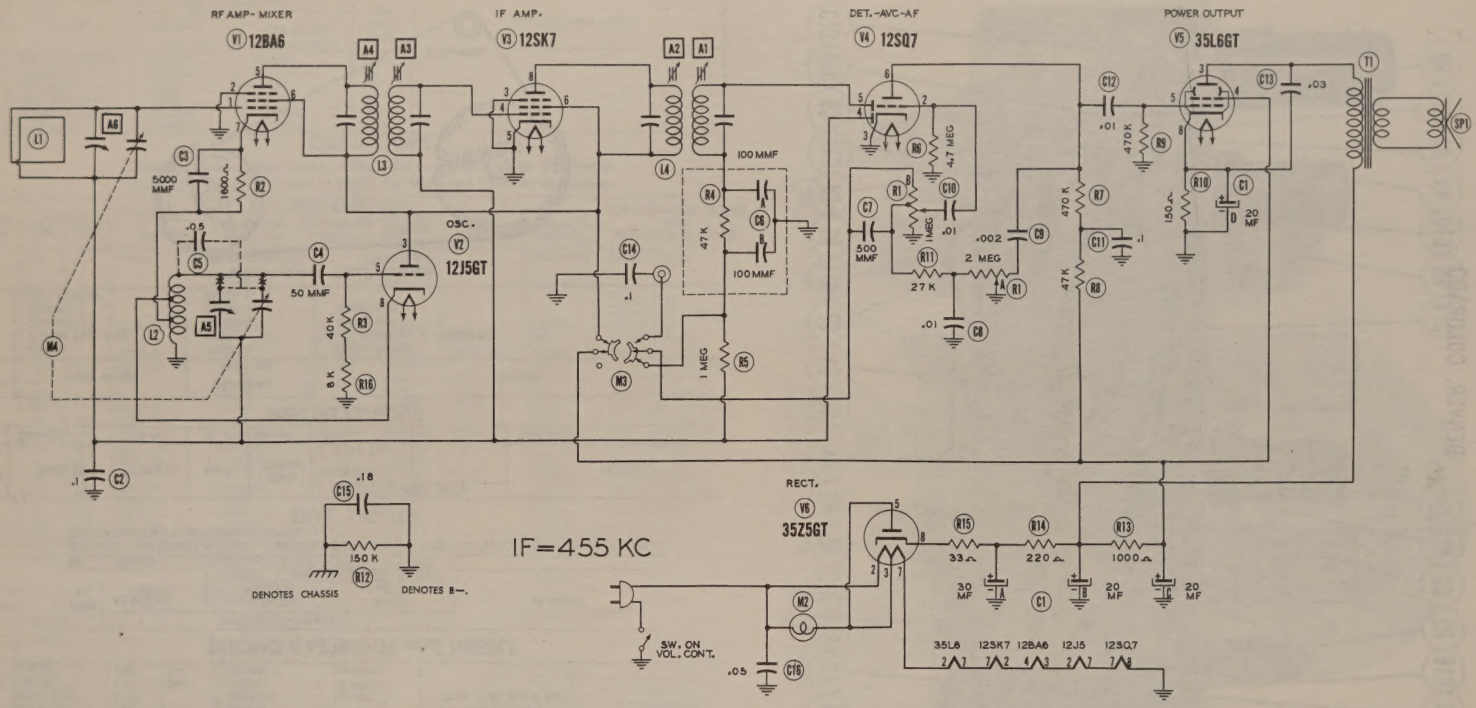
ADMIRAL MODEL 6S12



RADIO-PHONO SWITCH IN "RADIO" POSITION.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BA6	-.6VDC	0V.	27VAC	37VAC	80VDC	80VDC	5VDC	
V 2	12J5GT	0V.	25VAC	80VDC	0V.	8-18VDC	0V.	12VAC	0V.
V 3	12SK7	0V.	39VAC	0V.	-.6VDC	0V.	80VDC	50VAC	80VDC
V 4	12SQ7	0V.	-.8VDC	0V.	-.6VDC	-.8VDC	45VDC	12VAC	0V.
V 5	35L6GT	0V.	85VAC	95VDC	80VDC	0V.	80VDC	50VAC	4.6VDC
V 6	35Z5GT	0V.	117VAC	115VAC	117VAC	115VAC	113VDC	87VAC	115VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12BA6	2 Meg.	0Ω	27Ω	39Ω	†1.2KΩ	†1.2KΩ	1.6KΩ	
V 2	12J5GT	150KΩ	27Ω	†1.2KΩ	Inf.	48KΩ	Inf.	14Ω	2.6Ω
V 3	12SK7	150KΩ	39Ω	0Ω	2 Meg.	0Ω	†1.2KΩ	50Ω	†1.2KΩ
V 4	12SQ7	150KΩ	4.7 Meg.	0Ω	2 Meg.	1 Meg.	†520KΩ	14Ω	0Ω
V 5	35L6GT	Inf.	87Ω	†455Ω	†1.2KΩ	470KΩ	†48KΩ	50Ω	150Ω
V 6	35Z5GT	Inf.	110Ω	108Ω	110Ω	108Ω	†33Ω	87Ω	100KΩ

† MEASURED FROM PIN 8 OF V6.

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A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

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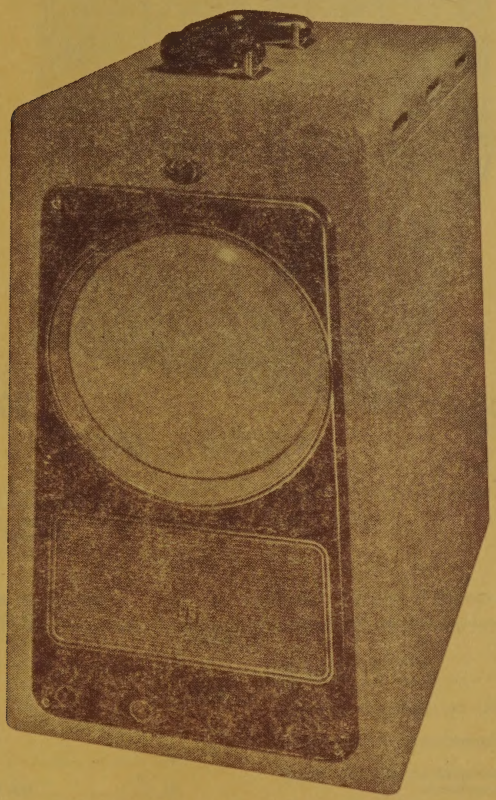

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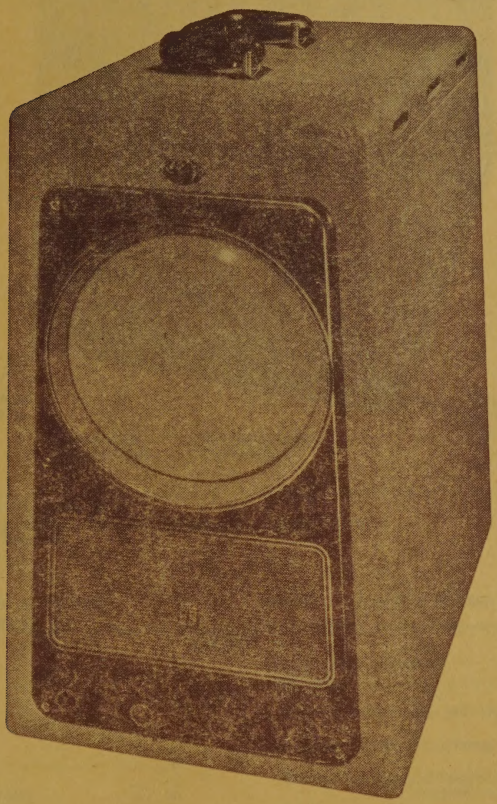

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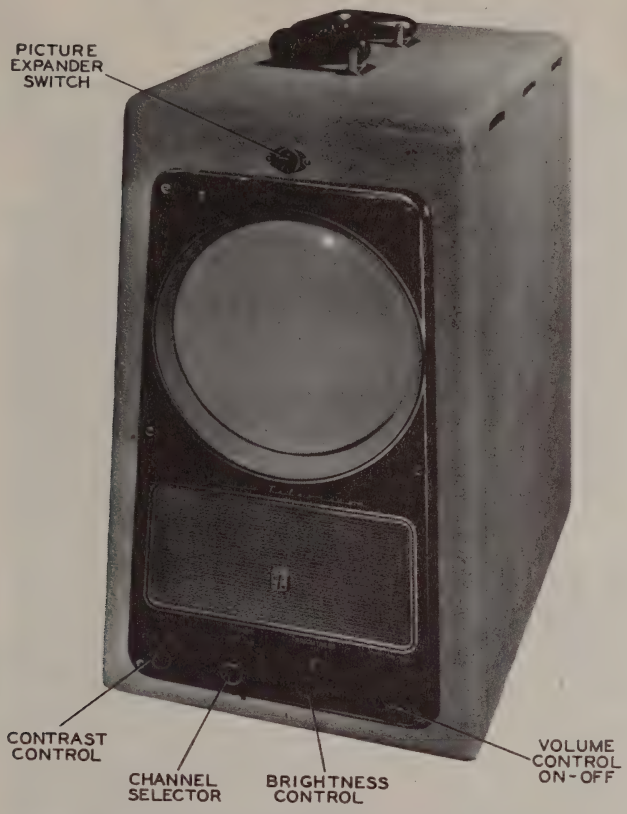
MODEL 94GSE-3015A



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AIRLINE
MODEL 94GSE-3015A

TRADE NAME	Airline, Model 94GSE-3015A
SUPPLIER	Montgomery Ward and Co., 619 Chicago Ave., Chicago, Illinois
TYPE SET	Television Receiver
TUBES	Twenty One

POWER SUPPLY 110-120 Volts AC-60 Cycle RATING 1.2 Amp. at 117 Volts AC
TUNING RANGE—Channels 2 thru 13

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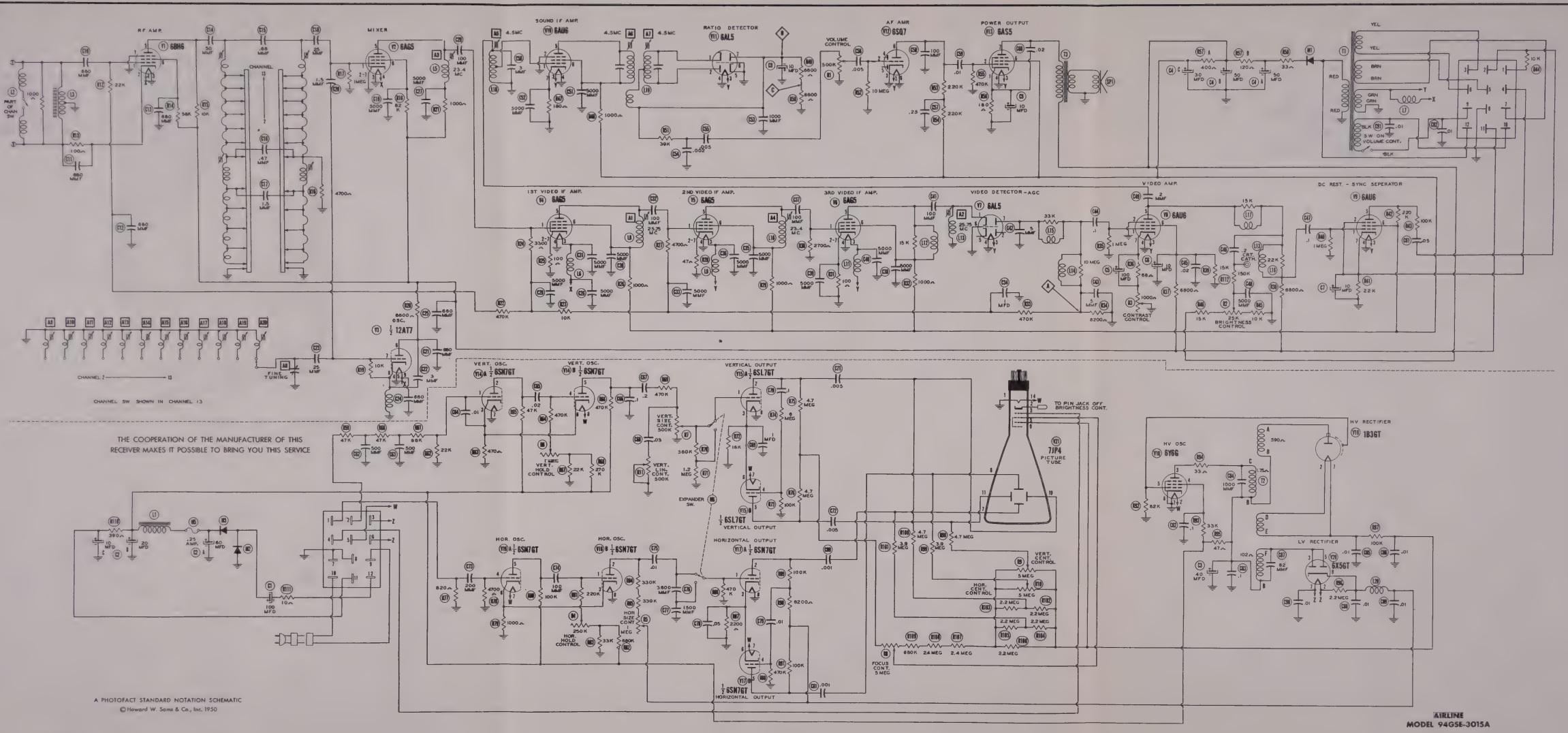

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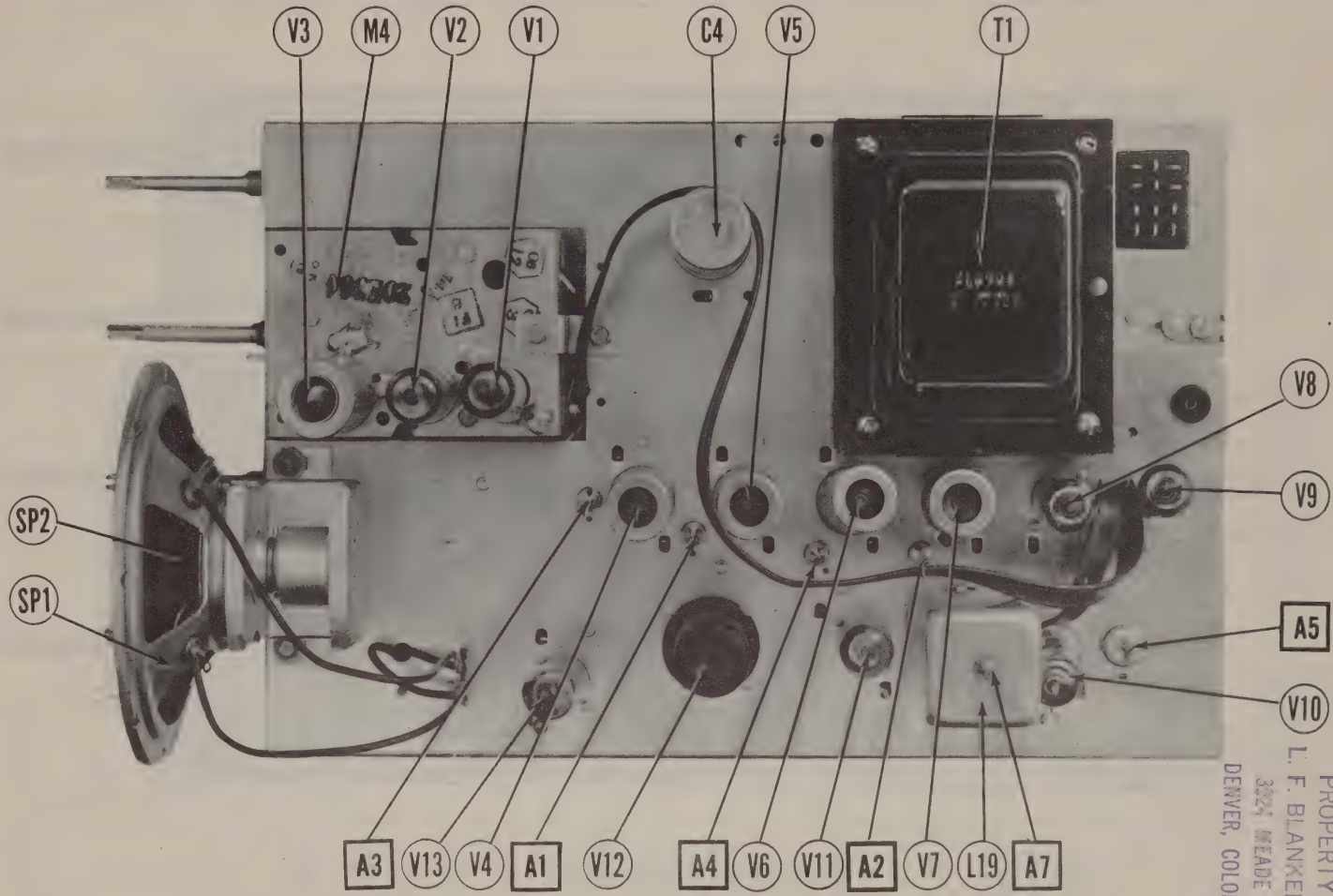

RF-IF CHASSIS-TOP VIEW

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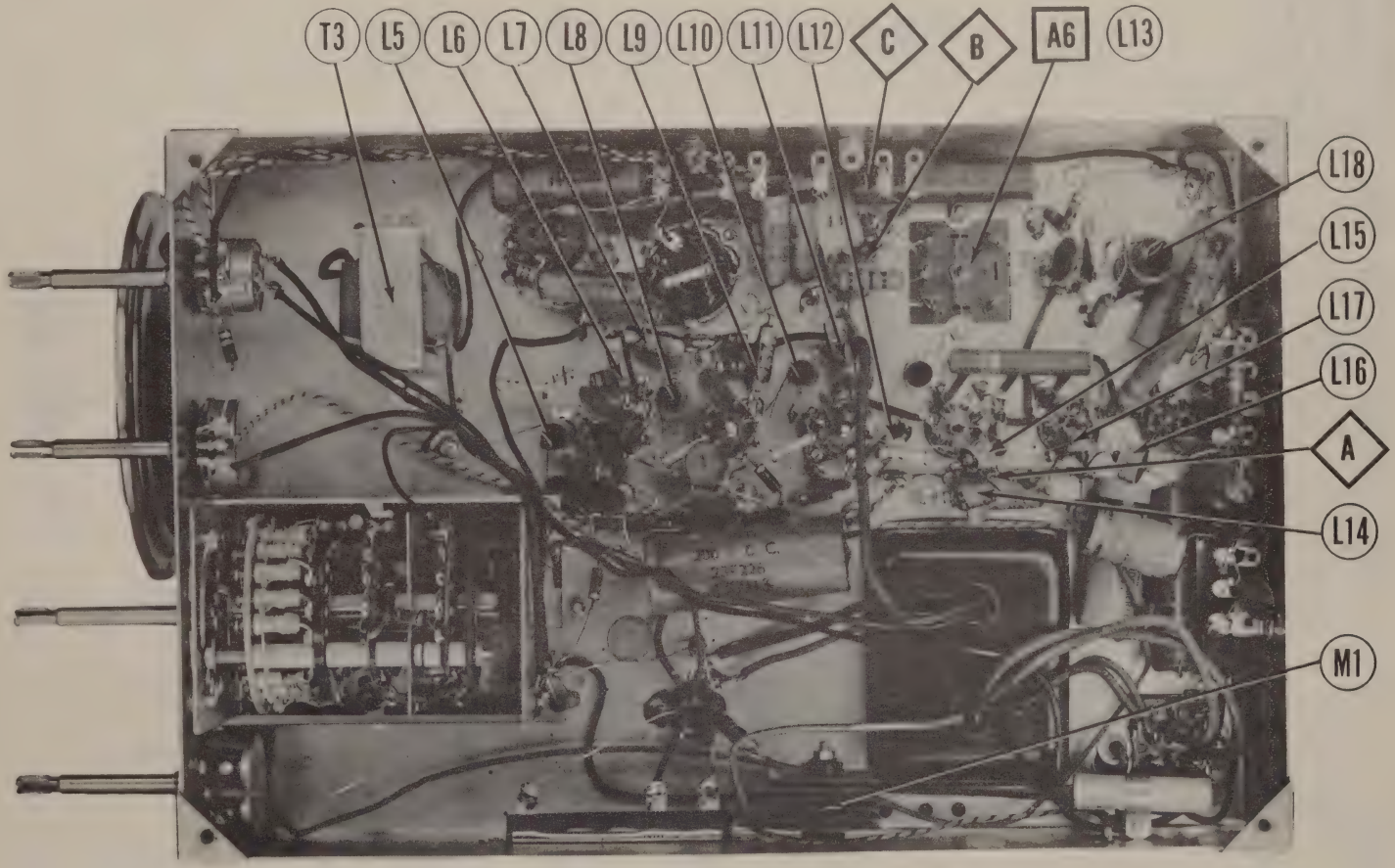
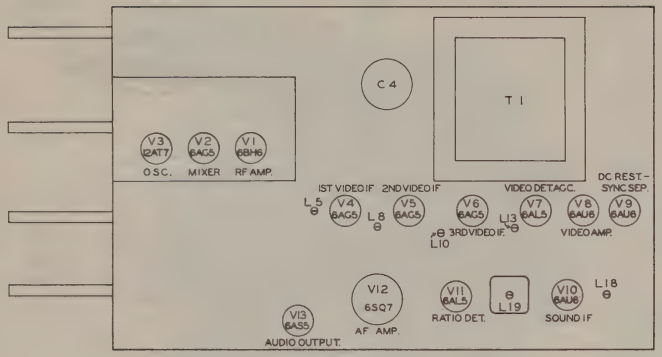


RF-IF CHASSIS-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION



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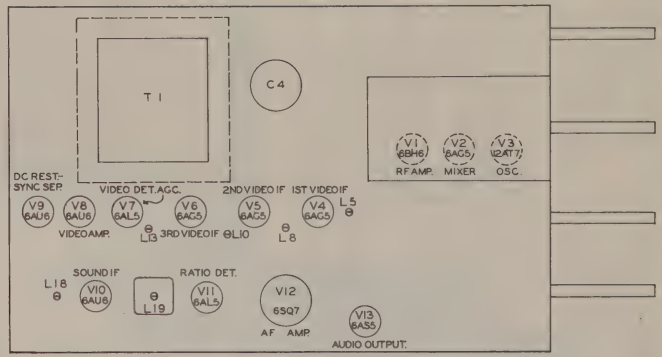

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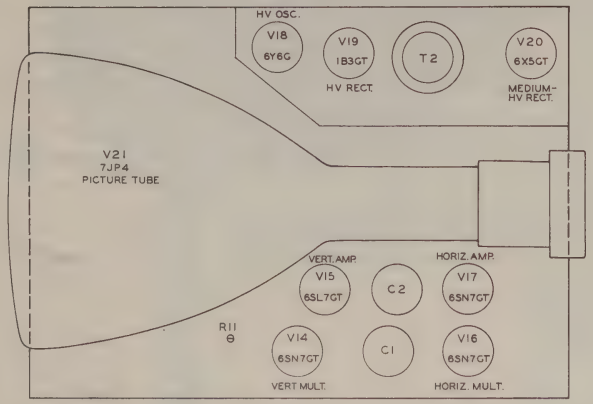

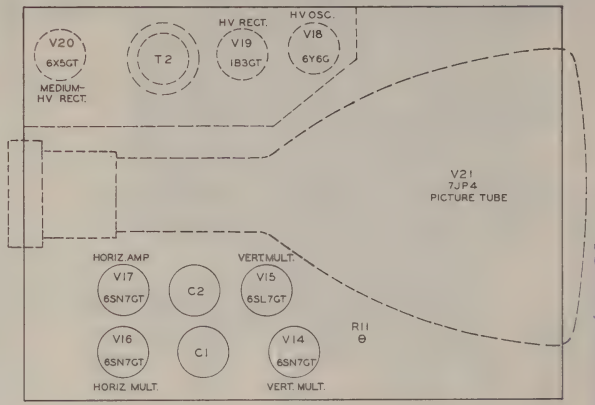

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TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

VIDEO IF ALIGNMENT

Remove the local oscillator tube (V3) from its socket to prevent erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	25.75MC (Unmod.)	Any	DC Probe to Point (A). Common to chassis.	A1, A2	Adjust for maximum deflection.
2.	Direct	"	23.4MC	"	"	A3, A4	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNEGT SCOPE	ADJUST	REMARKS
3.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	24MC (10MC SWP)	21MC 25.5MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V8). Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point (B). Common to chassis.	A5, A6	Adjust for maximum deflection.
5.	.01MFD	"	"	"	DC Probe to Point (C). Common to Point (D).	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to pin 1 (Grid) of 6AU6 (V8). Low side to chassis.	4.5MC (450KC Sweep)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A5, A6	Disconnect stabilizer capacitor C8. Adjust for maximum amplitude and symmetry as per figure 2.
5.	.01MFD	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A7	Reconnect capacitor C8. Adjust A7 so 4.5MC occurs at center of crossover lines as per figure 3. Slightly retouch A6 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT

Replace the local oscillator tube (V3) in its socket.

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

The overall oscillator circuit adjustment (A8) should not be adjusted unless there is insufficient range on any of the individual channel oscillator trimmers (A9 thru A20). If A8 is changed ALL channels will require readjustment. On the tuners using a 6C4 oscillator tube there is an additional adjustment adjacent to the channel 13 trimmer. This adjustment is to be used in the event that one of the high channel trimmers (A14 thru A20) show insufficient range. If this adjustment is changed all of the high channels will require readjustment.

The RF and mixer circuits have been pre-set at the factory and are very stable. They should not normally require adjustment in the field.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
6.	Two 120Ω carbon res.	Across antenna terminals with 120Ω in each lead.	57MC (10MC SWP)	55.25MC 59.75MC	2	Vert. Amp. to Point (A). Low side to chassis.	A9	Adjust to place the video marker at 50% as shown in figure 4. The sound marker should be at 5%.
			63MC (10MC SWP)	61.25MC 65.75MC	3		A10	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A11	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A12	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A13	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A14	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A15	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A16	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A17	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A18	
			207MC (10MC SWP)	205.25MC 209.75MC	12		A19	
			213MC (10MC SWP)	211.25MC 215.75MC	13		A20	

FIG. 1

FIG. 2

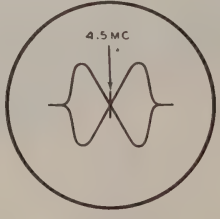

FIG. 3

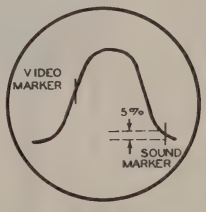

FIG. 4

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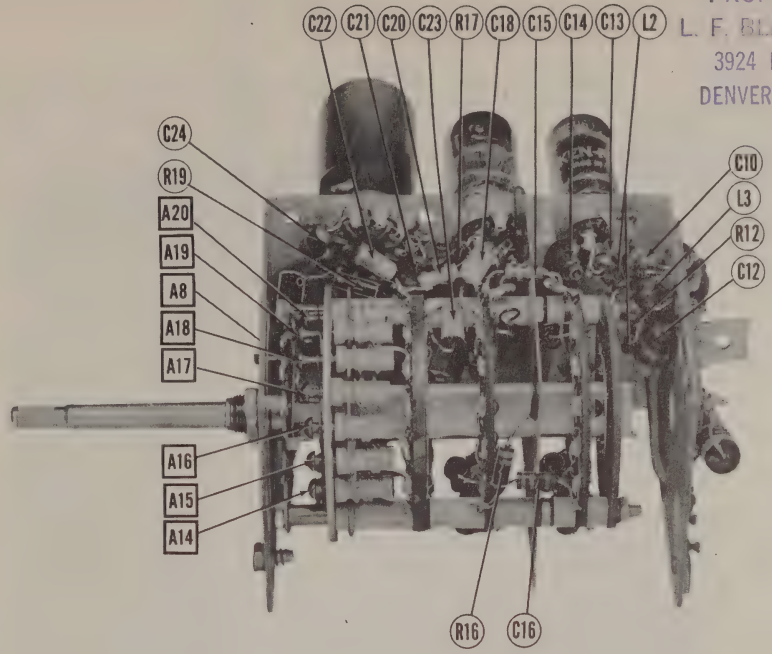
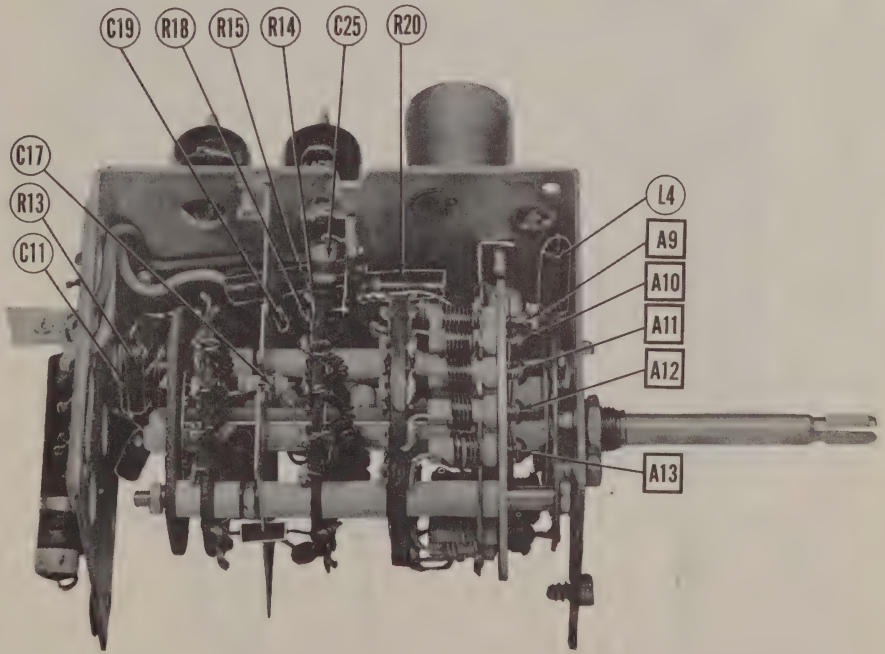


RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BH6	-.2VDC	.6VDC	0V.	6.3VAC	190VDC	130VDC	0V.		
V 2	6AG5	-1.2VDC	0V.	0V.	6.3VAC	230VDC	120VDC	0V.		
V 3	12AT7	0V.	0V.	0V.	0V.	0V.	180VDC	§-.2VDC	0V.	6.3VAC
V 4	6AG5	-.3VDC	.7VDC	6.3VAC	0V.	100VDC	100VDC	.7VDC		
V 5	6AG5	-.4VDC	.4VDC	6.3VAC	0V.	100VDC	100VDC	.4VDC		
V 6	6AG5	0V.	.9VDC	6.3VAC	0V.	100VDC	100VDC	.9VDC		
V 7	6AL5	0V.	0V.	6.3VAC	0V.	0V.	0V.	-2.7VDC		
V 8	6AU6	.5VDC	0V.	6.3VAC	0V.	180VDC	140VDC	11VDC		
V 9	6AU6	-.1VDC	.8VDC	6.3VAC	0V.	75VDC	110VDC	.8VDC		
V 10	6AU6	0V.	0V.	6.3VAC	0V.	100VDC	100VDC	1VDC		
V 11	6AL5	-.2VDC	-.2VDC	6.3VAC	0V.	0V.	0V.	-.3VDC		
V 12	6SQ7	0V.	-.4VDC	0V.	0V.	0V.	55VDC	6.3VAC	0V.	
V 13	6AS5	7.2VDC	0V.	6.3VAC	0V.	0V.	110VDC	110VDC		
V 14	6SN7GT	0V.	80VDC	1VDC	-16VDC -23VDC	80VDC	1VDC	0V.	6.3VAC	
V 15	6SL7GT	0V.	280VDC	5VDC	.1VDC	280VDC	5VDC	6.3VAC	0V.	
V 16	6SN7GT	-12VDC -6.6VDC	75VDC 30VDC	2.6VDC	0V.	60VDC	2.6VDC	6.3VAC	0V.	
V 17	6SN7GT	-11VDC	310VDC	12VDC	3.2VDC	310VDC	12VDC	6.3VAC	0V.	
V 18	6Y6G	250VDC	6.3VAC	250VDC	130VDC	-30VDC	250VDC	0V.	0V.	
V 19	1B3GT	* DO NOT MEASURE.								
V 20	6X5GT	0V.	¶	*	0V.	*	0V.	¶	620VDC	

V 21	7JP4	PIN 1	PIN 2	PIN 3	PIN 5	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 14
		0V.	150VDC	3.6VDC	*	*	*	*	*	*	6.3VAC

§ TAKEN WITH VACUUM TUBE VOLTMETER.
¶ 6.3VAC MEASURED ACROSS FILAMENTS.
* DO NOT MEASURE.

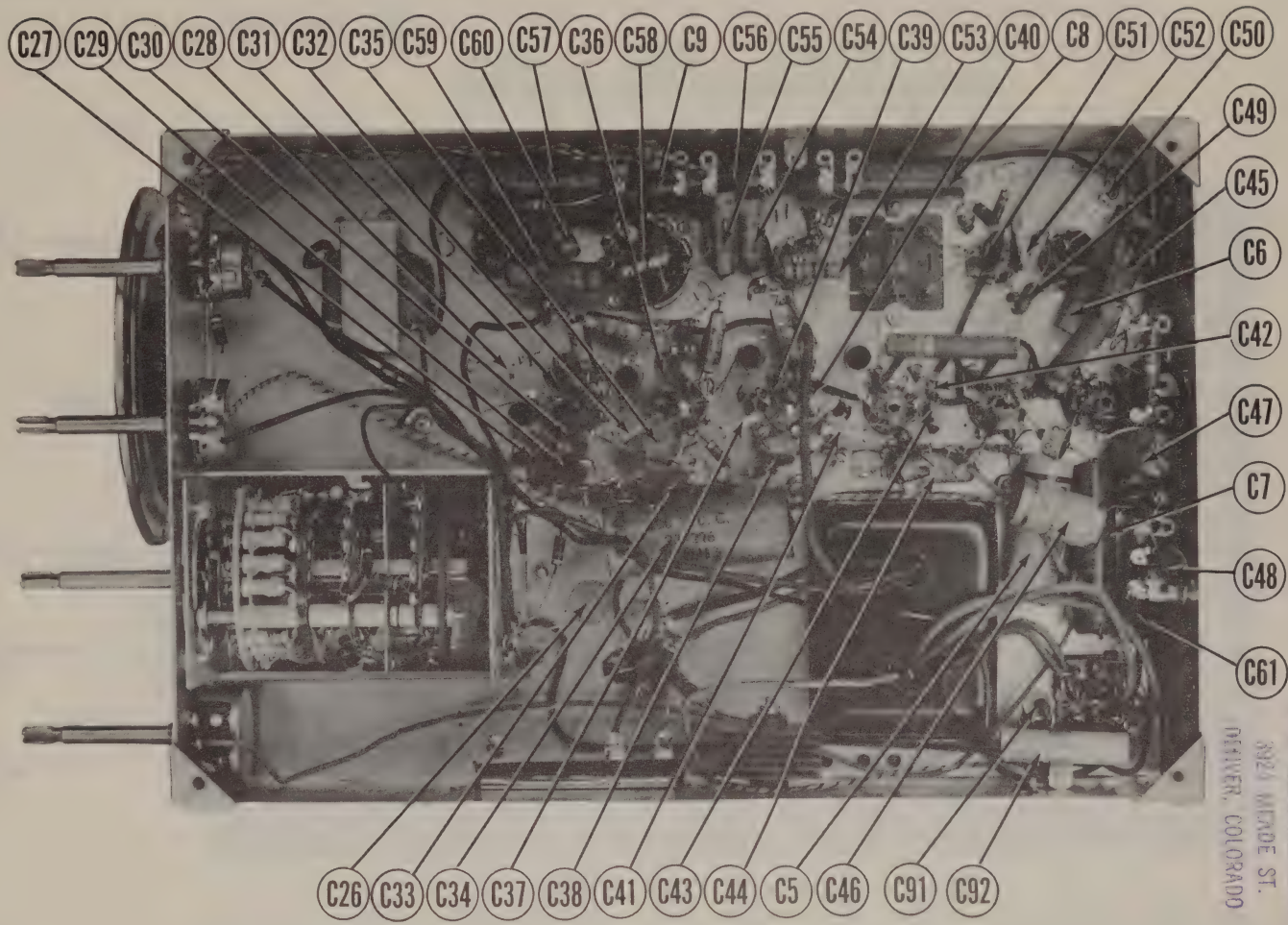
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BH6	1 Meg.	100Ω	0Ω	.1Ω	▲11KΩ	▲56KΩ	0Ω		
V 2	6AG5	1 Meg.	0Ω	0Ω	.1Ω	▲1.5KΩ	▲82KΩ	0Ω		
V 3	12AT7	0Ω	0Ω	0Ω	0Ω	0Ω	▲7.8KΩ	10KΩ	.5Ω	.1Ω
V 4	6AG5	500KΩ	100Ω	.1Ω	0Ω	†1.5KΩ	†1.5KΩ	100Ω		
V 5	6AG5	500KΩ	47Ω	.1Ω	0Ω	†1.5KΩ	†1.5KΩ	47Ω		
V 6	6AG5	2.7KΩ	100Ω	.1Ω	0Ω	†1.5KΩ	†1.5KΩ	100Ω		
V 7	6AL5	.1Ω	Inf.	.1Ω	0Ω	Inf.	0Ω	8.2KΩ		
V 8	6AU6	1 Meg.	0Ω	.1Ω	0Ω	▲7.5KΩ	▲6.6KΩ	1000Ω		
V 9	6AU6	1 Meg.	22KΩ	.1Ω	0Ω	†220KΩ	†555Ω	22KΩ		
V 10	6AU6	1.5Ω	0Ω	.1Ω	0Ω	†1.5KΩ	†1.5KΩ	180Ω		
V 11	6AL5	Inf.	Inf.	.1Ω	0Ω	0Ω	0Ω	14KΩ		
V 12	6SQ7	0Ω	10 Meg.	0Ω	Inf.	Inf.	†440KΩ	.1Ω	0Ω	
V 13	6AS5	180Ω	470KΩ	.1Ω	0Ω	470KΩ	†555Ω	†400Ω		
V 14	6SN7GT	18KΩ	▲47KΩ	470Ω	490KΩ 1.4KΩ	▲470KΩ	470Ω	0Ω	.1Ω	
V 15	6SL7GT	340KΩ 560KΩ	#16 Meg.	18KΩ	100KΩ	#16 Meg.	18KΩ	.1Ω	0Ω	
V 16	6SN7GT	270KΩ 560KΩ	♦660KΩ ♦1.6 Meg.	1000Ω	4.7KΩ	▲100KΩ	1000Ω	.1Ω	0Ω	
V 17	6SN7GT	470KΩ	♦100KΩ	2.2KΩ	470KΩ	♦100KΩ	2.2KΩ	.1Ω	0Ω	
V 18	6Y6G	▲180Ω	.1Ω	▲200Ω	▲33KΩ	82KΩ	▲130Ω	0Ω	0Ω	
V 19	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ▲770Ω
V 20	6X5GT	Inf.	♦2.2 Meg.	▲280Ω	Inf.	▲280Ω	Inf.	♦2.2 Meg.	Inf.	

V 21	7JP4	PIN 1	PIN 2	PIN 3	PIN 5	PIN 7	PIN 8	PIN 9	PIN 10	PIN 11	PIN 14
		0Ω	160KΩ	22KΩ	#6 Meg. #10 Meg.	#4 Meg. #5 Meg.	#5 Meg.	#100KΩ	#7 Meg.	#4.8Meg. # 6 Meg.	.1Ω

PICTURE EXPANDER SWITCH IN NORMAL POSITION
† MEASURED FROM OUTPUT OF M1
▲ MEASURED FROM OUTPUT OF M3
MEASURED FROM PIN 7 OF V19
♦ MEASIRED FROM PIN 8 OF V20

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



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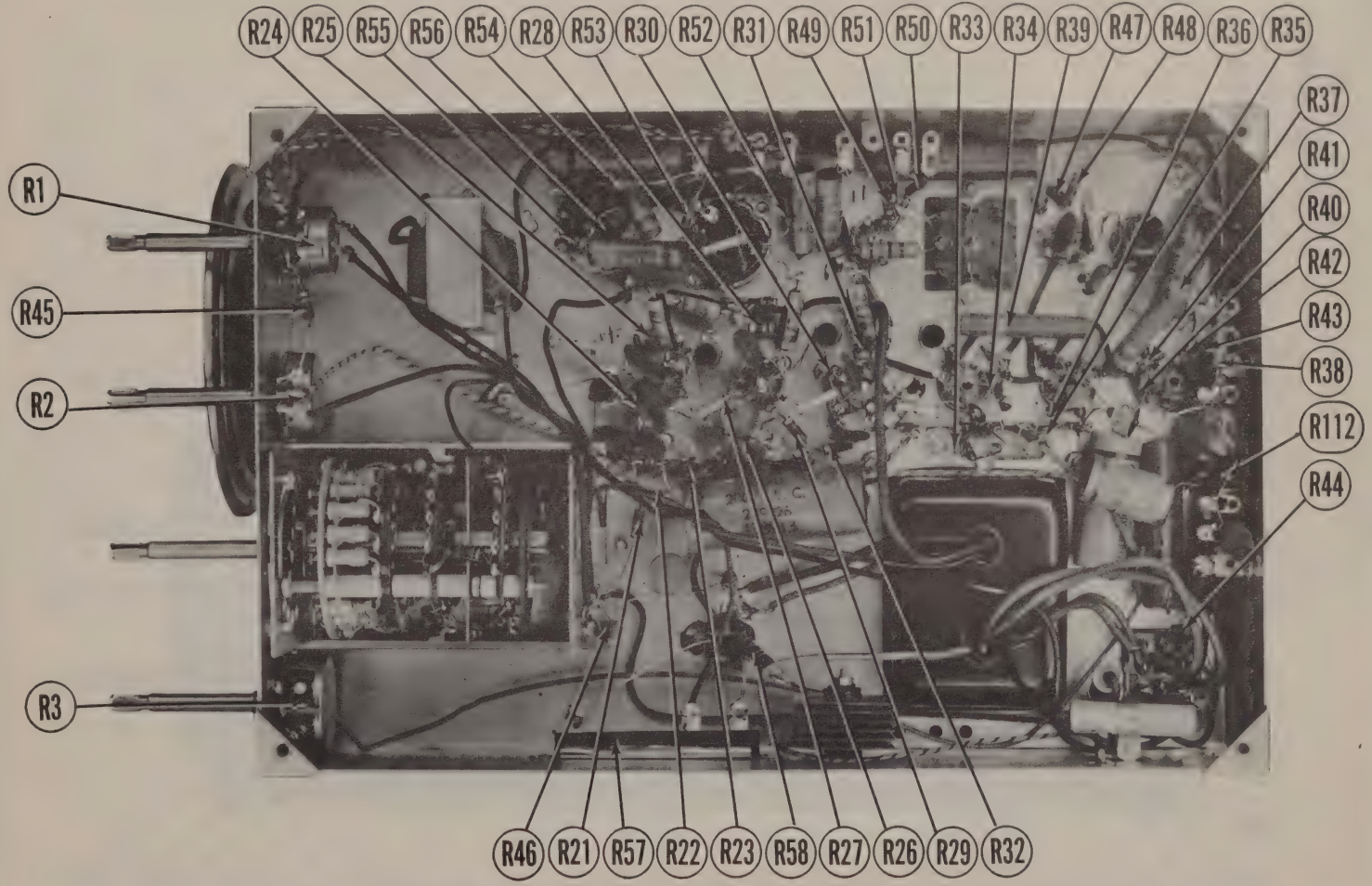
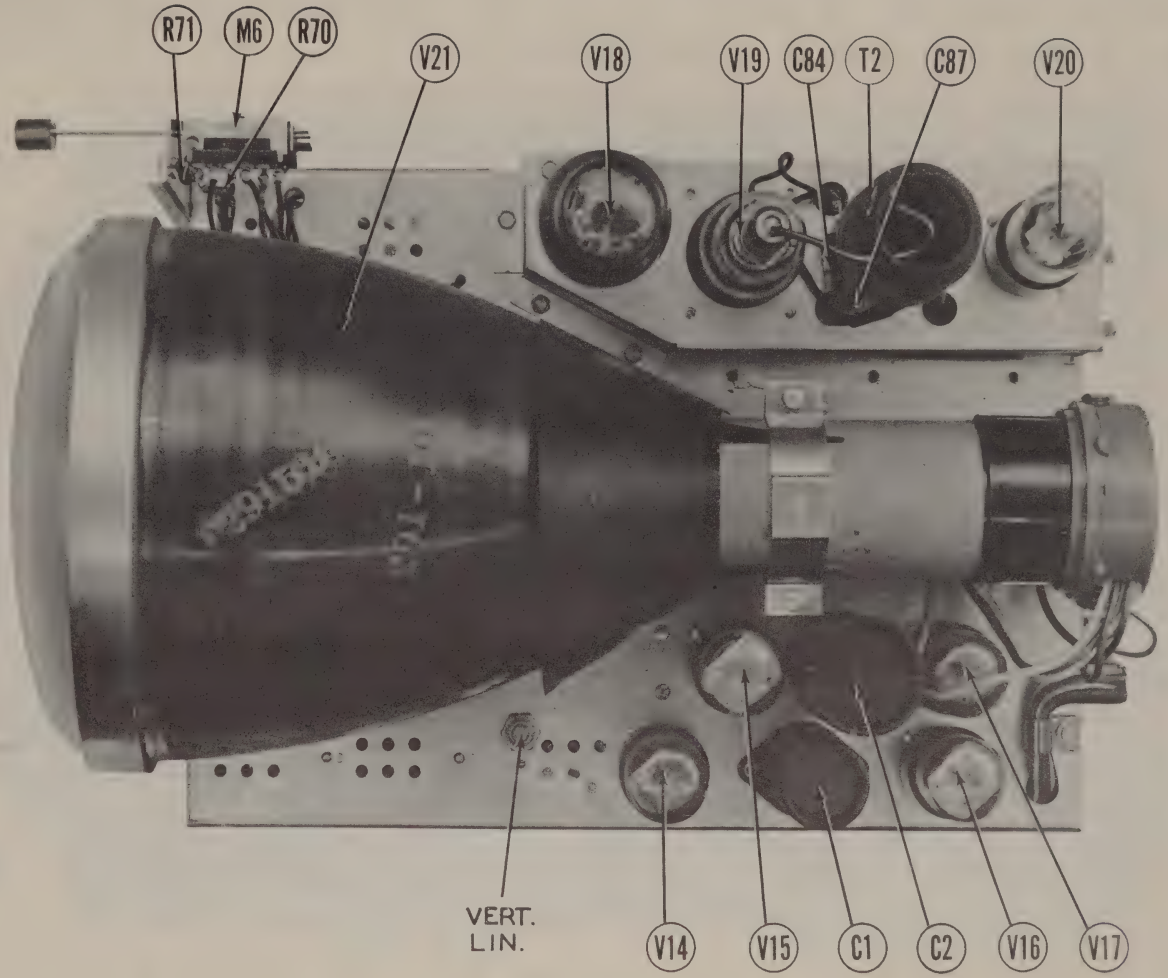
8924 MEADE ST.
DENVER, COLORADO

RF-IF CHASSIS-BOTTOM VIEW-CAPACITOR IDENTIFICATION

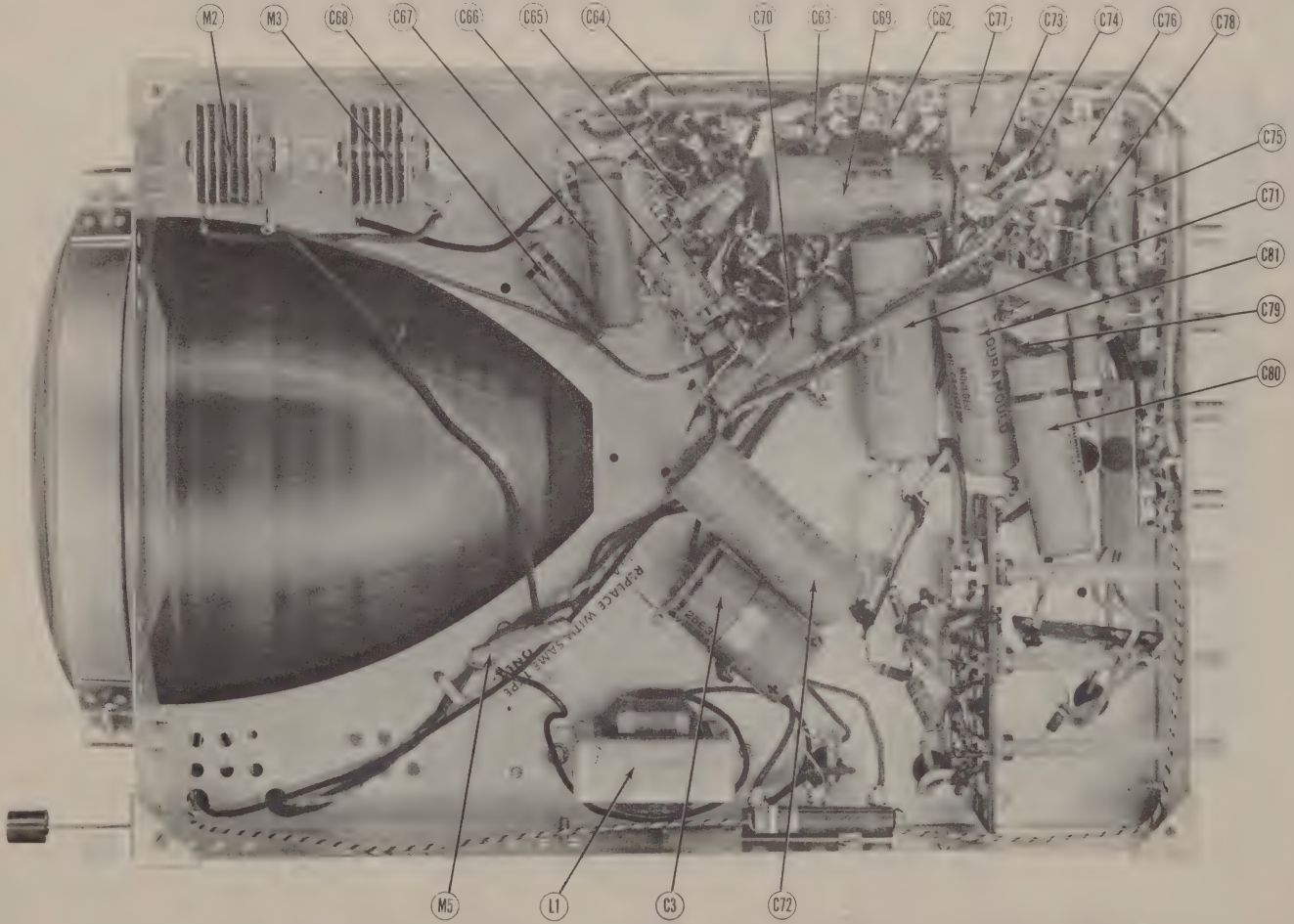


RF-IF CHASSIS-BOTTOM VIEW-RESISTOR IDENTIFICATON

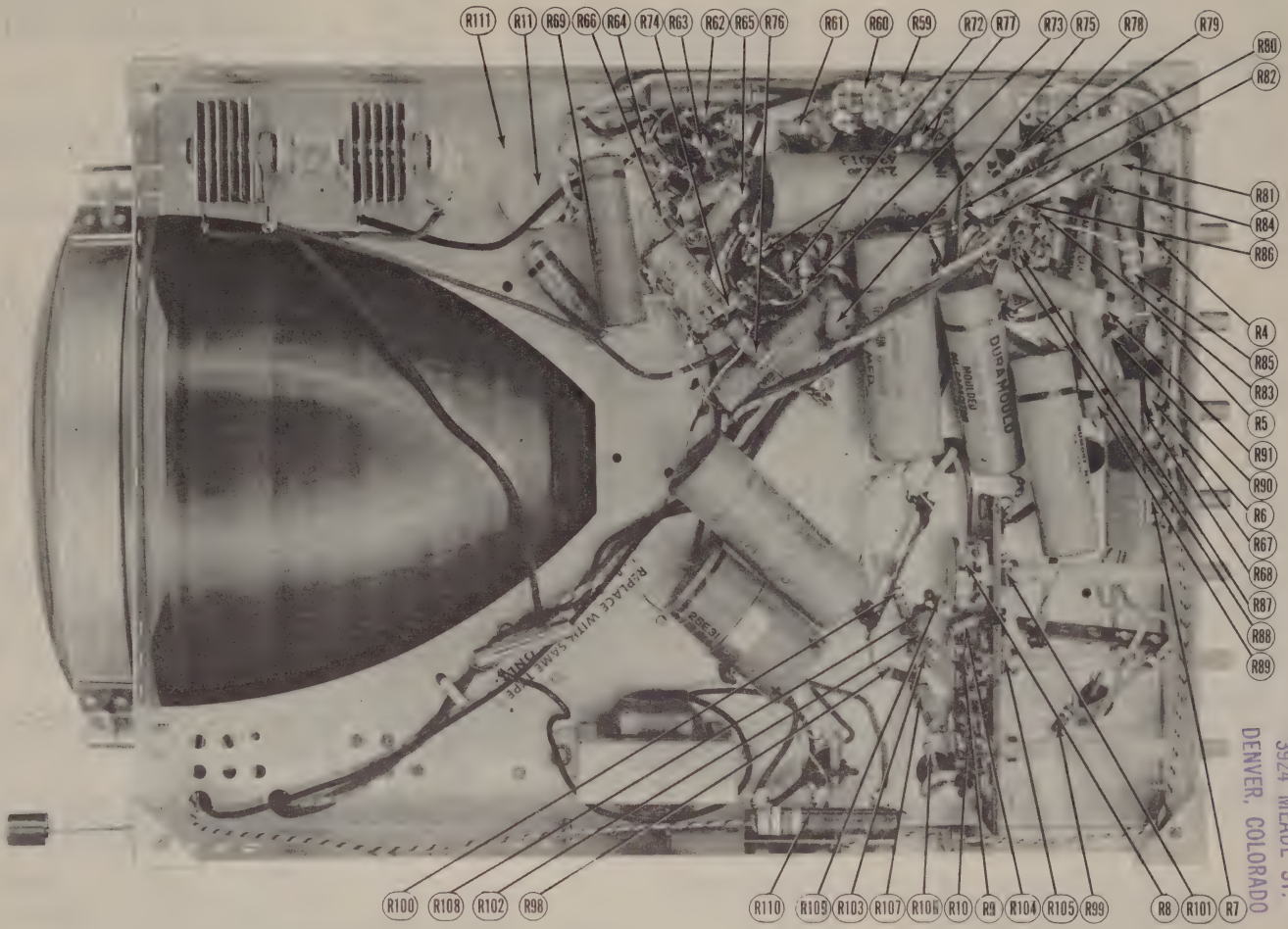


SWEEP CHASSIS-TOP VIEW

PROPERTY OF
L. F. ELANKENSHIP
3624 MEADE ST.
DENVER, COLORADO



SWEEP CHASSIS-CAPACITOR AND MISCELLANEOUS IDENTIFICATION



SWEEP CHASSIS-RESISTOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No	USE	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1A	RF Amp.	6BH6	6BH6	7CM	
B	RF Amp.	6AG5	6AG5	7BD	Used in some models.
V2	Mixer	6AG5	6AG5	7BD	
V3A	Oscillator	12AT7	12AT7	9A	
B	Oscillator	6C4	6C4	6BG	Used in some models.
V4	1st Video IF	6AG5	6AG5	7BD	
V5	2nd Video IF	6AG5	6AG5	7BD	
V6	3rd Video IF	6AG5	6AG5	7BD	
V7	Video Det.-AGC	6AL5	6AL5	6BT	
V8	Video Amp.	6AU6	6AU6	7BK	
V9	DC Rest.-Sync. Sep.	6AU6	6AU6	7BK	
V10	Sound IF Amp.	6AU6	6AU6	7BK	
V11	Ratio Det.	6AL5	6AL5	6BT	
V12	Audio Amp.	6SQ7	6SQ7	8Q	
V13	Audio Output	6AS5	6AS5	7CV	
V14	Vert. Mult.	6SN7GT	6SN7GT	8BD	
V15	Vert. Amp.	6SL7GT	6SL7GT	8BD	
V16	Hor. Mult.	6SN7GT	6SN7GT	8BD	
V17	Hor. Amp.	6SN7GT	6SN7GT	8BD	
V18	HV Osc.	6Y6G	6Y6G	7AC	
V19	HV Rect.	1B3GT	1B3GT	3C	
V20	Med. HV Rect.	6X5GT	6X5GT	8S	
V21	Picture Tube	72P4	72P4	14G	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	100	150	MW22E32	AF20D		UPE5515		TVL-1420	Voltage Doubler Cap.
C2A	60	300	MW25E33	AFH1242G					▲ Filter
B	20	300							■ Filter
C	10	300							▲ Filter
C3	40	300	MW25E31	PRS450/40		BR4035		TVA-94	Filter
C4A	50	150	MW25E30	AF88D		UP5515		TVL-305	RF Coupling
B	50	150							▲ Filter
C	30	150							Filter
C5	100	10	MW25E12	PRS12/100				UHC-112	V. Amp. Cath. Byp.
C6	10	250	MW25E35	PRS250/12		BR1235		TVA-77	V. Amp. Screen Byp.
C7	10	25	MW25E6	PRS25/10		BBR10-25		TVA-5	Sync. Sep.-DC Rest.
									Filter
C8	10	25	MW25E8	PRS25/10		BBR10-25		TVA-5	Stabilizing Cap.
C9	10	25	MW25E8	PRS25/10		BBR10-25		TVA-5	Output Cath. Byp.
C10	680			GP680M	D6-681		GP2K-680		RF Coupling
C11	680			GP680M	D6-681		GP2K-680		RF Cathode Byp.
C12	680			GP680M	D6-681		GP2K-680		AGC Filter
C13	680			GP680M	D6-681		GP2K-680		RF Screen Bypass
C14	50			GP50K	D6-500		GP1K-50		RF Coupling
C15	.68				D2-.68				RF Coupling
C16	.47								RF Coupling
C17	1.5				D2-1.5		NPOK-1.5		RF Coupling
C18	25			GP25K	D6-250		GP1K-25		RF Coupling
C19	5000			BPD-5		81L-005		29C1	Mixer Screen Byp.
C20	1.5				D2-1.5		NPOK-1.5		Osc. Coupling
C21	680			GP680M	D6-681		GP2K-680		Osc. Plate Bypass
C22	3			C3DN750	D2-3.3		N750K-3		Osc. Feedback
C23	25			CN25JNPO	D2-24		GP1K-25		Osc. Grid Cap.
C24	680			GP680M	D6-681		GP2K-680		Osc. Fil. Byp.
C25	680			GP680M	D6-681		GP2K-680		RF Bypass
C26	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	Filament Bypass
C27	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	Mixer Plate Decoupling
C28	100		MW22E11	GP100M	D6-101	5W5T1	GP1K-100	1FM-31	IF Coupling
C29	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	AGC Filter
C30	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	1st V. IF Decoupling
C31	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	1st V. IF Fil. Bypass
C32	100		MW22E11	GP100M	D6-101	5W5T1	GP1K-100	1FM-31	IF Coupling
C33	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	AGC Filter
C34	1.0	200	MW22E266	484-1.0		GT2W1		TC-10	AGC Filter
C35	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	2nd V. IF Decoup.
C36	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	2nd V. IF Fil. Bypass
C37	100		MW22E11	GP100M	D6-101	5W5T1	GP1K-100	1FM-31	IF Coupling
C38	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	3rd V. IF Decoupling
C39	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	3rd V. IF Cath. Byp.
C40	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	3rd V. IF Fil. Byp.
C41	100		MW22E11	GP100M	D6-101	5W5T1	GP1K-100	1FM-31	IF Coupling
C42	5		MW22E328	GP5K	D2-4.7	5W5V5	NPOK-5	MS-55	V. Diode Filter
C43	5		MW22E328	GP5K	D2-4.7	5W5V5	NPOK-5	MS-55	RF Bypass
C44	.1	200	MW22E218	P288-1		PTE4P1		TM-1	Video Coupling
C45	.02	600	MW23E413	P688-02		PTE6S2		TM-12	V. Amp. Screen Bypass
C46	.2	400	MW23E420	P488-22		GT4P2		TM-2	Video Coupling
C47	.1	400	MW23E411	P488-1		PTE4P1		TM-1	Video Coupling
C48	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	Pic. Tube Cath. Dec.
C49	2		MW22E21	S12CNPO	D2-2.2		NPOK-2		S. IF Coup.
C50	3		MW22E31	C3DN750			N750K-3		Fixed Trimmer
C51	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	S. IF Decoupling
C52	5000		MW22E2025	BPD-5	D6-502	1D5D5	81L-005	29C1	S. IF Cath. Byp.
C53	1000		MW22E2012	GP1000M	D6-102	1WD1	GP2L-001	1FM-31	Diode Load Cap.
C54	.002	400	MW23E405	P688-002	D6-202	PTE6D2	GP3M-002	TM-22	De-emphasis
C55	.005	400	MW23E408	P688-005	D6-502	PTE6D5	GP3M-005	TM-25	Audio Coupling
C56	.005	400	MW23E408	P688-005	D6-502	PTE6D5	GP3M-005	TM-25	Audio Coupling
C57	.25	200	MW23E222	P488-25		GT2P25		TC-2	AF Amp. Plate Decoup.
C58	100		MW22E11	GP100M	D6-101	5W5T1	GP1K-100	1FM-31	AF Amp. Plate Byp.
C59	.01	400	MW23E411	P488-01	D6-103	PTE4S1	81L-01	TM-11	Audio Coupling
C60	.02	400	MW23E413	P488-02		PTE4S2		TM-12	Output Plate Byp.
C61	.05	400	MW23E216	P488-05		PTE4S5		TM-15	Sync. Coupling
C62	500	500	MW23E45	1468-0005	D6-501	5W5T5	GP2K-500	1FM-35	Integrator Net.
C63	500	500	MW23E45	1468-0005	D6-501	5W5T5	GP2K-500	1FM-35	Integrator Net.
C64	.01	400	MW23E211	P488-01	D6-101	PTE4S1	81L-01	TM-11	Integrator Net.

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C65	.02	400	MW23E413	P488-022				PTE4S2	Vert. MV Feedback
C66	.1	400	MW23E418	P488-1				PTE4P1	Vert. Discharge
C67	.2	400	MW23E21	P488-22				GT4P2	Vert. Sweep Coupling
C68	.03	400	MW23E414	P488-03				PTE6S3	Vert. Discharge
C69	1.0	200	MW22E266	484-1.0		GT2W1		TC-10	Vert. Amp. Cath. Byp.
C70	.1	600	MW23E618	P688-1				PTE6P1	Vert. Sweep Coup.
C71	.005	6000	MW23E2026-3	6089M-005				PTE6D5	Vert. Sweep Coup.
C72	.005	6000	MW23E2026-3	6089M-005				PTE6D5	Vert. Sweep Coup.
C73	200	500	MW23E41	1468-0002	D6-201			5W5T2	Hor. Sync. Coupling
C74	100		MW23E3	GP100M	D6-101			5W5T1	Hor. MV Feedback
C75	.01	1200	MW23E211	P1688-01				PTE16S1	Hor. Sweep Coupling
C76	3000	500	MW23E54-10	1467-003	D6-302			1W5D3	Voltage Divider
C77	1500	500	MW23E51-10	1467-0015	D6-152			1W5D15	Voltage Divider
C78	.05	200	MW23E2026-2	P2689M-05				PTE6S5	Hor. Amp. Cath. Byp.
C79	.01	1200	MW23E211	P1688-01				PTE16S1	Hor. Sweep Coupling
C80	.001	6000	MW23E2026-2	6089M-001				PTE6D1	Hor. Sweep Coupling
C81	.001	6000	MW23E2026-2	P2689M-05				PTE6D5	Hor. Sweep Coupling
C82	.1	400	MW23E2035	P488-1				PTE4P1	HV Osc. Screen Byp.
C83	.1	400	MW23E418	P488-1				PTE4P1	Decoupling
C84	1000	500	MW23E50-5	1467-001	D6-102		GP2L-001	1WD1	Fixed Trimmer
C85	.001	6000	MW23E2036	6089M-001				PTE6D1	HV Filter
C86	.001	6000	MW23E2036	6089M-001				PTE6D1	HV Filter
C87	82		MW23E29	S182N750	DN-82		N750L-82		Fixed Trimmer
C88	.01	1200	MW23E211	P1688-01				PTE16S1	Med. HV Filter
C89	.01	1200	MW23E211	P1688-01				PTE16S1	Med. HV Filter
C90	.01	1200	MW23E211	P1688-01				PTE16S1	Med. HV Fil. Byp.
C91	.01	220	MW23E2035-2	P688-01				PTE6S1	Line Filter
		VAC							
C92	.01	200 VAC	MW23E2035-2	P688-01				PTE6S1	Line Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	MW28E33	Q13-133	AM-60-Z	B8K-60-8	Volume control
B	Shaft		Not Req.	50 Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions
R2A	25KΩ	½	MW28E32	Q11-120	AM-40-S	AN-26	Brightness control
B	Shaft		Not Req.	Not Req.	KSS-3	AK-4	Attach to R2A per instructions
R3	1000Ω	2	MW28E31				Contrast control-Wire Wound
R4	250KΩ	½	MW28E45	Q11-130		B-50	Horiz. hold control
R5	1 Meg.	½	MW28E45	Q11-137		B-69	Horiz. size control
R6	1 Meg.	½	MW28E36	Q11-137		B-69	Vert. hold control
R7	500KΩ	½	MW28E37	Q11-133		B-59	Vert. size control
R8A	5 Meg.	½	MW28E34	Q11-141			Focus control
B	Shaft		Not Req.	TQ			Attach to R8A per instructions
R9A	5 Meg.	½	MW28E34	Q11-141			Vert. centering control
B	Shaft		Not Req.	TQ			Attach to R9A per instructions
R10A	5 Meg.	½	MW28E34	Q11-141			Horiz. centering control
B	Shaft		Not Req.	TQ			Attach to R10A per instructions
R11	500KΩ	½	MW28E37	Q11-133		B-59	Vert. linearity control

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES: ALL RESISTORS ARE ± 20% UNLESS OTHERWISE STATED.
R12	22KΩ	½			RF Grid-See Note 1
R13	100Ω	½			RF Cathode-See Note 2
R14	56KΩ	½			RF Screen
R15	10KΩ	½			RF Plate
R16	470Ω	½			Mixer Grid Coil Shunt
R17	1 Meg.	½			Mixer Grid
R18	82KΩ	½			Mixer Screen
R19	10KΩ	2			Osc. Grid
R20	6800Ω	½			Osc. Plate
R21	1000Ω 10%	½	MW27E102	BTS-1000	Mixer Plate Decoupling
R22	470KΩ	½	MW27E474	BTS-470K	AGC Network
R23	10KΩ 10%	½	MW27E103	BTS-10K	AGC Network
R24	3300Ω 10%	½	MW27E332	BTS-3300	1st Video IF Grid
R25	100Ω 10%	½	MW27E101		1st Video IF Cathode
R26	1000Ω 10%	½	MW27E102	BTS-1000	1st Video IF Decoupling
R27	470KΩ 10%	½	MW27E472		2nd Video IF Grid
R28	47Ω 10%	½	MW27E470		2nd Video IF Cathode
R29	1000Ω 10%	½	MW27E102	BTS-1000	2nd Video IF Decoupling
R30	2700Ω 10%	½	MW27E272	BTS-2700	3rd Video IF Grid
R31	100Ω 10%	½	MW27E101		3rd Video IF Cathode
R32	1000Ω 10%	½	MW27E102	BTS-1000	3rd Video IF Decoupling
R33	470KΩ	½	MW27E474	BTS-470K	AGC Network
R34	8200Ω 10%	½	MW27E1009-15	BTS-8200	Video Det. Diode Load
R35	1 Meg.	½	MW27E1009-105	BTS-1 Meg.	Video Amp. Grid
R36	68Ω 10%	½	MW27E680		Video Amp. Cathode
R37	6800Ω 10%	2	MW27E682-5	BT-2-6800	Video Amp. Screen
R38	6800Ω 10%	1	MW27E1009-14	BTA-6800	Video Amp. Plate
R39	15KΩ 10%	½	MW27E153-5	BT-2-15K	Voltage Divider
R40	1 Meg.	½	MW27E105	BTS-1 Meg.	Sync. Sep. Grid
R41	22KΩ 10%	½	MW27E223	BTS-22K	Picture Tube Grid
R42	220KΩ	½	MW27E224	BTS-220K	Sync. Sep. Plate
R43	100KΩ	½	MW27E104	BTS-100K	Isolation
R44	10KΩ 10%	½	MW27E103	BTS-10K	Voltage Divider
R45	10KΩ 10%	½	MW27E103	BTS-10K	Voltage Divider
R46	15KΩ 10%	½	MW27E153-3	BTA-15K	Voltage Divider
R47	1500Ω 10%	½	MW27E1R1		Sound IF Cathode
R48	1000Ω 10%	½	MW27E102	BTS-1000	Sound IF Decoupling
R49	6800Ω 10%	½	MW27E1009-13	BTS-6800	Ratio Det. Diode Load

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R50	680Ω 10%	½	MW27E1009-13	BTS-6800	Ratio Det. Diode Load
R51	39KΩ 10%	½	MW27E393	BTS-39K	De-emphasis
R52	10 Meg.	½	MW27E106	BTS-10 Meg.	AF Amp. Grid
R53	220KΩ	½	MW27E224	BTS-220K	AF Amp. Plate
R54	220KΩ	½	MW27E224	BTS-220K	AF Amp. Plate Decoupling
R55	470KΩ	½	MW27E474	BTS-470K	Output Grid
R56	180Ω	½	MW27E181-2	BW-1-180	Output Cathode
R57A	400Ω 10%	10	MW27E1008		Filter-Wire Wound
B	120Ω 10%				Filter-Wire Wound
R58	330Ω 10%	1	MW27E330-3		Surge Limiter
R59	47KΩ 10%	½	MW27E473	BTS-47K	Integrator Network
R60	47KΩ 10%	½	MW27E473	BTS-47K	Integrator Network
R61	68KΩ 10%	½	MW27E683	BTS-68K	Integrator Network
R62	22KΩ 10%	½	MW27E223	BTS-22K	Vert. MV Grid
R63	47ΩΩ 10%	½	MW27E471	BTS-470	Vert. MV Cathode
R64	470KΩ	½	MW27E474	BTS-470K	Vert. MV Grid
R65	47KΩ 10%	1	MW27E473-3	BTA-47K	Vert. MV Plate
R66	470KΩ	½	MW27E474	BTS-470K	Vert. MV Plate
R67	22KΩ	½	MW27E223	BTS-22K	Voltage Divider
R68	270KΩ	½	MW27E274	BTS-270K	Voltage Divider
R69	470KΩ	½	MW27E474	BTS-470K	Voltage Divider
R70	560KΩ	½	MW27E564	BTS-560K	Vert. Amp. Grid
R71	1.2 Meg. 5%	1	MW27E1009-5	BTS-1.2 Meg. 5%	Vert. Amp. Grid
R72	18KΩ	½	MW27E183-2	BTS-18K	Vert. Amp. Cathode-See Note 3
R73	100KΩ	½	MW27E104	BTS-100K	Vert. Amp. Grid
R74	6 Meg.	½	MW27E1009-19		Voltage Divider
R75	4.7 Meg. 10%	1	MW27E1017	BTA-4.7 Meg.	Vert. Amp. Plate
R76	4.7 Meg. 10%	1	MW27E1017	BTA-4.7 Meg.	Vert. Amp. Plate
R77	820Ω 10%	½	MW27E821	BTS-820	Voltage Divider-See Note 4
R78	4700Ω 10%	½	MW27E472	BTS-4700	Horiz. MV Grid
R79	1000Ω 10%	½	MW27E102	BTS-1000	Horiz. MV Cathode
R80	100KΩ	½	MW27E104	BTS-100K	Horiz. MV Plate
R81	220KΩ	½	MW27E1009-17	BTS-220K	Horiz. MV Grid
R82	680KΩ	½	MW27E1009-18	BTS-680K	Voltage Divider
R83	33KΩ 10%	½	MW27E1009-18	BTS-33K	Voltage Divider
R84	330KΩ	1	MW27E334-3	BTA-330K	Horiz. MV Plate
R85	330KΩ	1	MW27E334-3	BTA-330K	Horiz. MV Plate
R86	470KΩ	½	MW27E474	BTS-470K	Horiz. Amp. Grid
R87	220ΩΩ	½	MW27E222	BTS-2200	Horiz. Amp. Cathode
R88	470KΩ	½	MW27E474	BTS-470K	Horiz. Amp. Grid
R89	100KΩ	2	MW27E104-5	BT-2-100K	Horiz. Amp. Plate
R90	8200Ω	½	MW27E822	BTS-8200	Horiz. Amp. Plate
R91	100KΩ	2	MW27E104-5	BT-2-100K	Horiz. Amp. Plate
R92	82KΩ 10%	½	MW27E823	BTS-82K	HV Osc. Grid
R93	33KΩ 10%	1	MW27E333-3	BTA-33K	HV Osc. Screen
R93	33Ω		MW27E330-2		Parasitic Supp.
R95	47Ω 10%	½-1	MW27E470-2	BW-½-47	HV Osc. Plate Decoupling
R96	2.2 Meg.	½	MW27E225	BTS-2.2 Meg.	Filament Isolation
R97	100KΩ	½	MW27E104-3		HV Filter
R98	4.7 Meg.	½	MW27E475-2	BTS-4.7 Meg.	Vert. Deflection Load
R99	3.9 Meg.	½	MW27E395-2	BTS-3.9 Meg.	Horiz. Deflection Load
R100	4.7 Meg.	½	MW27E475-2	BTS-4.7 Meg.	Vert. Deflection Load
R101	3.9 Meg.	½	MW27E395-2	BTS-3.9 Meg.	Horiz. Deflection Load
R102	2.2 Meg.	½	MW27E225-2	BTS-2.2 Meg.	Voltage Divider
R103	2.2 Meg.	½	MW27E225-2	BTS-2.2 Meg.	Voltage Divider
R104	2.2 Meg.	½	MW27E225-2	BTS-2.2 Meg.	Voltage Divider
R105	2.2 Meg.	½	MW27E225-2	BTS-2.2 Meg.	Voltage Divider
R106	2.2 Meg.	½	MW27E225-2	BTS-2.2 Meg.	Voltage Divider
R107	2.4 Meg. 10%	1	MW27E1017-2		Voltage Divider
R108	2.4 Meg. 10%	1	MW27E1017-2		Voltage Divider
R109	680KΩ	½	MW27E684-2	BTS-680K	Voltage Divider
R110	390Ω 10%	½	MW27E1015	BW-2-390	Filter-Wire Wound
R111	10Ω 10%	5	MW27E1014		Surge Limiter-Wire Wound
R112	150KΩ	½	MW27E154	BTS-150K	Voltage Divider

Note 1. Some models use 1 Meg. resistor in this application.
Note 2. Some models use 150Ω resistor in this application.
Note 3. Some models use a 100KΩ resistor and a 2.2 MΩ resistor in parallel to obtain required resistance and wattage.
Note 4. Some models use two 470Ω resistors in series to obtain required resistance and wattage.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC @ 1.2A	6.3VAC @ 6A	6.3VAC @ 4A	6.3VAC @ 4.5A SEC. 4 117VAC @ .070A	MW22E87-2	P-8158		

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: AIRLINE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	1.7Ω	50Ω SEC. 2 0Ω SEC. 3 102Ω	MW20E370				HV Transformer

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T3	4200Ω	4Ω	250Ω	.5Ω	MW22E28	A-3877	A-2930	RO-8 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	AIRLINE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	4Ω	MW1E31-2	ST-107 ③ MOD. P5-V	5A15 ②	② Use universal mounting bracket provided. ③ Fabricate new mounting bracket.
	CONE DIA.	V. C. DIA.				
SP2	4 3/4"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∽)	AIRLINE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.145ADC	130Ω	2.7 Henries	MW22E36	C-2304 ①	C-2994		① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	AIRLINE PART No.	MEISSNER PART No.	
L2	Ant. Loading	0Ω				Channels 7-13 , part of tuner MW20E364
L3	Ant. Loading	0Ω				Channels 2-6, part of tuner MW20E364
L4	RF Choke	.3Ω				Part of tuner MW20E364
L5	1st Video IF	.1Ω		MW20E360		
L6	Fil. Choke	0Ω		MW2E78		
L7	Fil. Choke	0Ω		MW2E78		
L8	2nd Video IF	.1Ω		MW20E360		
L9	Fil. Choke	0Ω		MW2E78		
L10	3rd Video IF	.1Ω		MW20E360		
L11	Fil. Choke	0Ω		MW2E78		
L12	RF Choke	2.1Ω		MW2E79		Wound on 15KΩ resistor
L13	4th Video IF	.1Ω		MW20E360		
L14	Peaking	19Ω		MW20E363-6		Wound on 10 Meg. resistor
L15	Peaking	9.8Ω		MW20E363-2		Wound on 33KΩ resistor.
L16	Peaking	19Ω		MW20E363-7		Wound on 22KΩ resistor
L17	Peaking	14Ω		MW20E363-3		Wound on 15KΩ resistor.
L18	Sound IF	4.2Ω		MW20E361		Tap at 1.5Ω
L19	Ratio Det. Trans.	4Ω	.5Ω	MW20E362		
L20	RF Choke	110Ω		MW2E75		

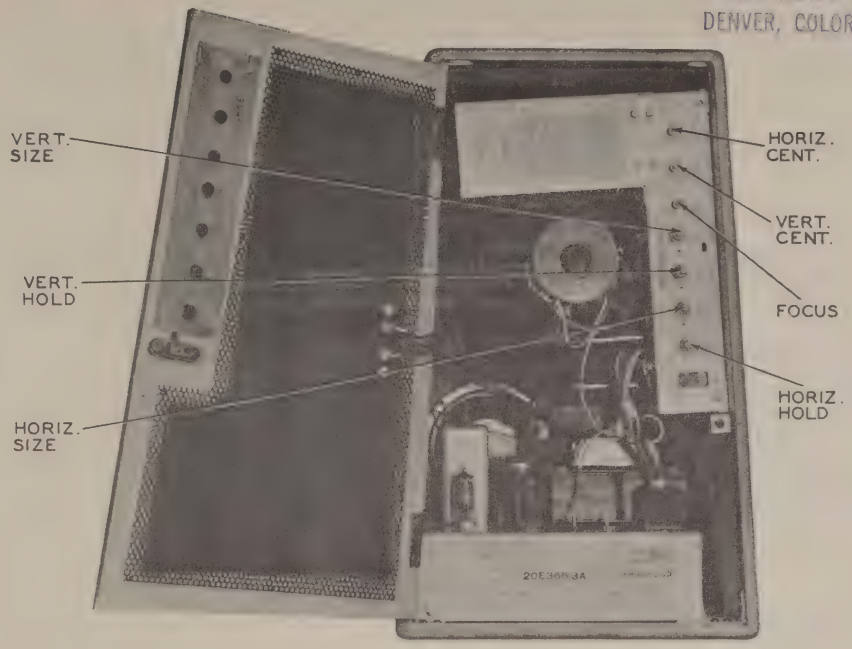
SELENIUM RECTIFIER

ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	AIRLINE PART No.	SYLVANIA PART No.	SELETRON PART No.	
M1	.070ADC	MW57E3	NB-5	5M4	
M2	.145ADC	MW57E3	ND-5	5P1	
M3	.145ADC	MW57E3	ND-5	5P1	

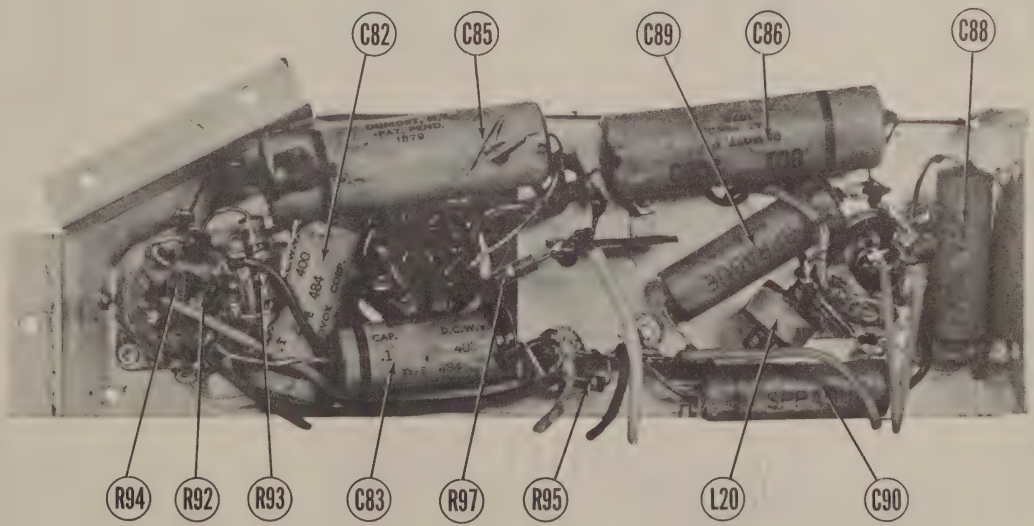
MISCELLANEOUS

ITEM No.	PART NAME	AIRLINE PART No.	NOTES
M4A	RF Tuner	MW20364	
B	RF Tuner	MW20E487-2	
C	RF Tuner	MW20E497-2	
M5	Fuse	MW40E6	.25A 250V
M6	Switch	MW29E25	Picture expander
	Knob	MW43E54	Picture expander
	Knob	MW37E42-7	Channel selector
	Knob	MW37E54	Contrast, brightness, volume
	Safety Glass	MW9E20	
	Cabinet	MW7E201	Less door and front plate
	Door	MW20E490	With hinges, antenna posts and AC line cord
	Escutcheon	MW5E51	Metal front plate
	Plug	MW17E30	12 contact male
	Socket	MW17E33	12 contact female

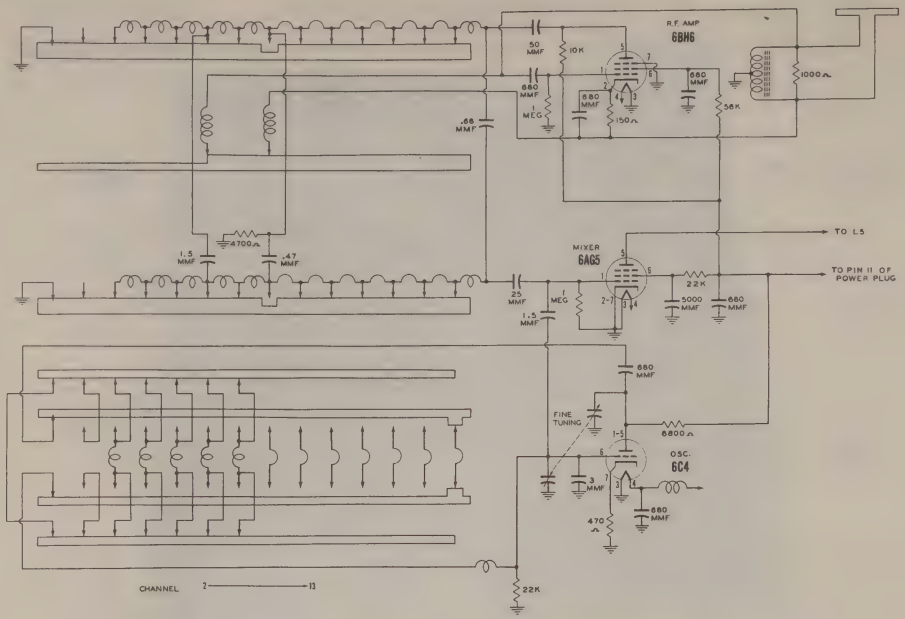
PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



CABINET-REAR VIEW



HIGH VOLTAGE SUPPLY-BOTTOM VIEW



A PHOTOFACT STANDARD NOTATION SCHEMATIC
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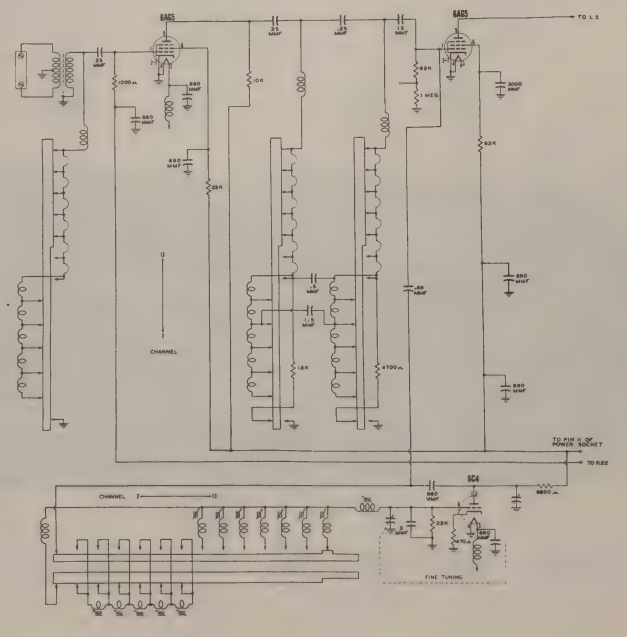
ALTERNATE TUNER



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ALTERNATE TUNER

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	12SK7GT	12SK7GT	8N	
V2	Converter	12SA7GT	12SA7GT	8AD	
V3	IF Amp.	12SK7GT	12SK7GT	8N	
V4	DET-AVC-AF	12SQ7GT	12SQ7GT	8Q	
V5	Power Output	35L6GT	35L6GT	7AC	
V6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ARVIN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150	A22111	PRS150/50-50		EDL5515		TVA-2453	Filter-Red
B	50	150							Filter-Plain
C2	.05	200	C20067-503	P288-05	DF-503	PTE4S5		2TM-15	AVC Filter
C3	50	500	C20065-500	1468-00005	D6-500	5W5Q5		1FM-45	Osc. Grid Cap.
C4	220		C20203-221	SI220	D6-221	5W5T2	GP2K-220	19C13	RF Filter
C5	.01	400	C20068-103	P488-01	D6-103	PTE4S1	811-01	4TM-11	Audio Coupling
C6	220		C20203-221	SI220	D6-221	5W5T2	GP2K-220	19C13	AF Amp. Plate
C7	.01	400	C20068-103	P488-01	D6-103	PTE4S1	811-01	4TM-11	Audio Coupling
C8	.003	600	C20069-302	P688-003	D6-302	PTE6D3	GP2M-003	6TM-23	Tone Compensation
C9	.02	400	C20068-203	P488-02	DF-203	PTE4S2		4TM-12	Output Plate Bypass
C10	.05	400	C20068-503	P488-05	DF-503	PTE4S5		4TM-15	Line Filter
C11	.05	400	C20068-503	P488-05	DF-503			72P51	Line Isolation

CONTROLS

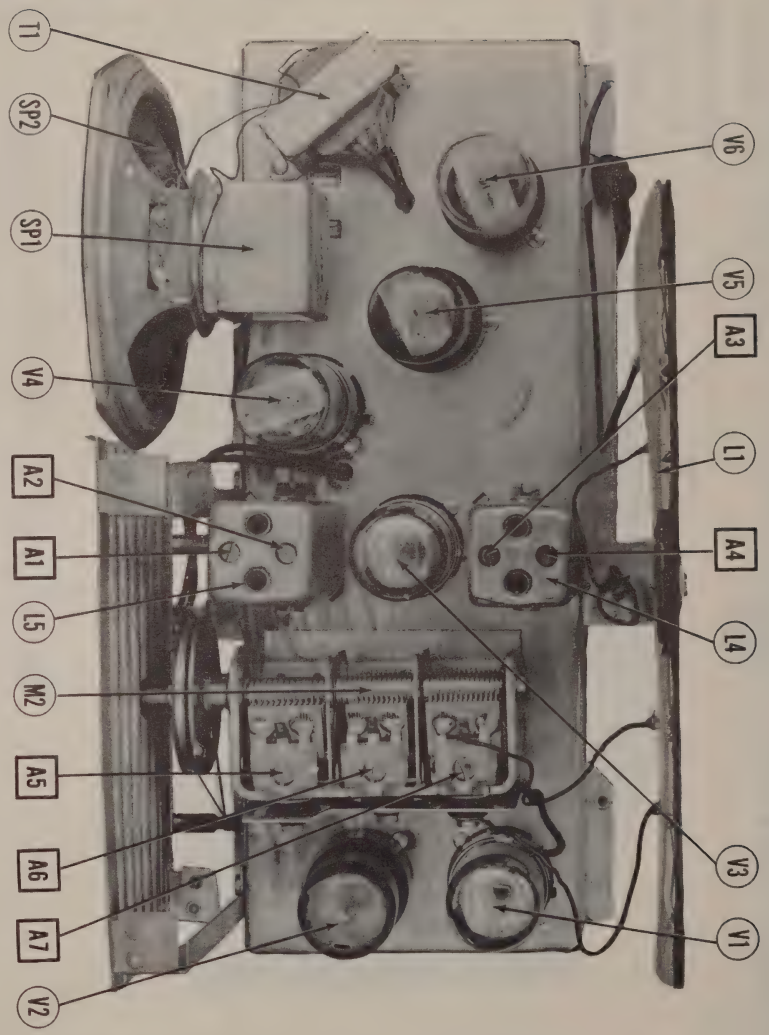
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	C22963	Q13-133	AG-60-Z	B-60-S	Volume control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB	Not Req.	Attach to R1A per instructions
R2A	500KΩ	½	C23156	Q13-133	AG-60-Z	B-60	Tone control
B	Shaft		Not Req.	Not Req	FS-3	Not Req	Attach to R2A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	IRC PART No.	IDENTIFICATION CODES
R3	1000Ω	½	C20060-102		Parasitic Suppressor
R4	22KΩ	½	C20060-223	BTS-22K	Osc. Grid
R5	6.8 Meg.	½	C20060-685	BTS-6.8 Meg.	AVC Network
R6	1 Meg.	½	C20060-105	BTS-1 Meg.	AVC Network
R7	3.3 Meg.	½	C20060-335	BTS-3.3 Meg.	AF Amp. Grid
R8	330KΩ	½	C20060-334	BTS-330K	AF Amp. Plate
R9	150Ω	½	C20060-151	BTS-150	Output Cathode
R10	1200Ω	2	C20223-122	BTB-1200	Filter
R11	15Ω	½	C20060-150		Surge Limiter
R12	150Ω	½	C20060-151	BTS-150	Filament Shunt-See Note 1
R13	330KΩ	½	C20060-334	BTS-330K	Isolation

Note 1. Not used in all models.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	4000Ω	4Ω	110Ω Tap ③ 5.6Ω	.4Ω	AC-23164	A-3330	A-3031	RO-3	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			ARVIN PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-105		
SP1	PM	4Ω	C22760-1	MOD. P5-X	5A07	
	CONE DIA.	V. C. DIA.				
SP2	4 1/2"	9/16"				

R F COILS

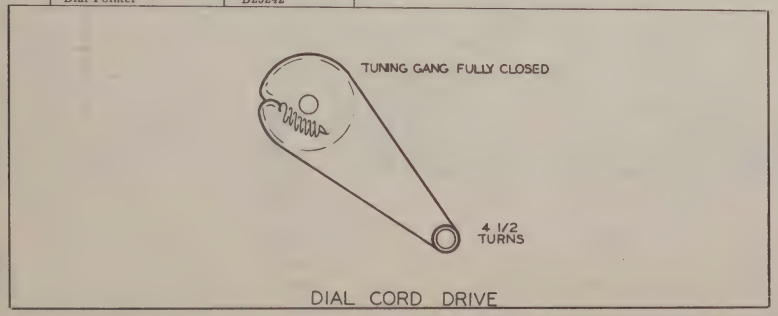
ITEM No.	USE	DC RES.		REPLACEMENT DATA	
		PRI.	SEC.	ARVIN PART No.	MEISSNER PART No.
L1	Loop Ant.	.2Ω	2Ω	D23159	
L2	RF Coil	.4Ω	4.3Ω	AC23163	14-1072
L3	Osc. Coil	.7Ω	6.8Ω	C23751	14-1073
L4	1st IF	25Ω	25Ω	AC23161	16-6658
L5	2nd IF	25Ω	25Ω	AC23162	16-6660

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					ARVIN PART No.		
M1	Bayonet	6-8	.15	Brown	A1931A		Type 47

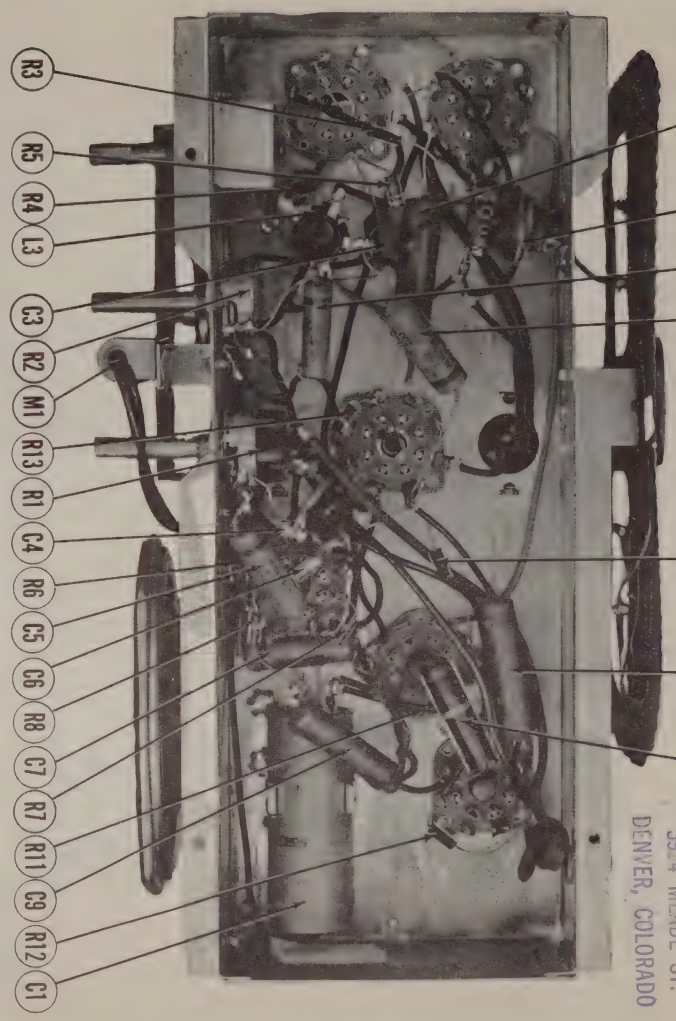
MISCELLANEOUS

ITEM No.	PART NAME	ARVIN PART No.	NOTES
M2	3 Gang Var. Cap.	C23743	(32-507MMF, 24-352MMF, 32-197MMF)
	Dial Crystal	D23235	
	Dial Pointer	D23242	



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



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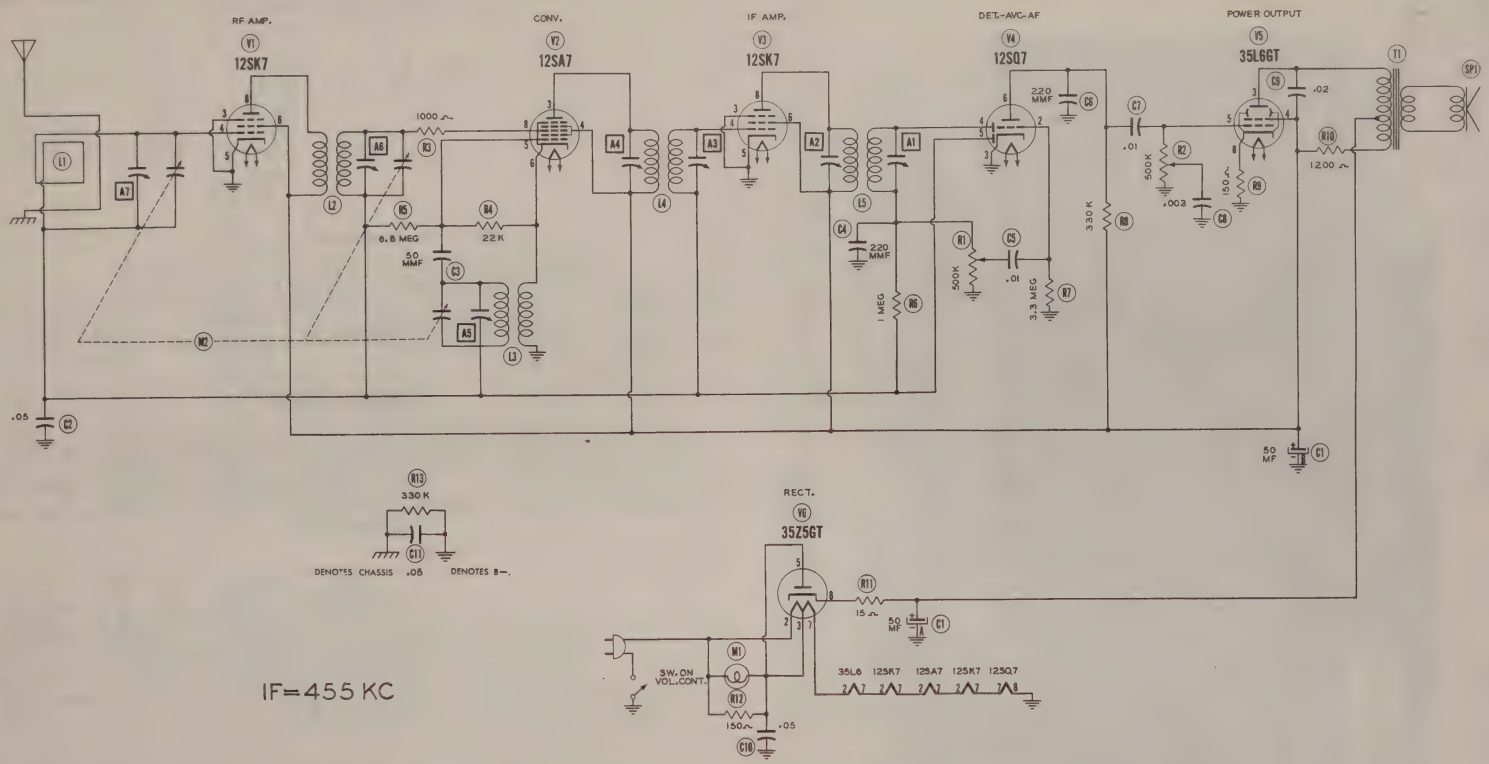
3924 MEADE ST.
DENVER, COLORADO

ARVIN MODEL 460T

ARVIN MODEL 460T



IF=455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SK7GT	0V.	50VAC	0V.	-.6VDC	0V.	80VDC	37VAC	80VDC
V 2	12SA7GT	0V.	37VAC	80VDC	80VDC	8-8.2VDC	0V.	24VAC	-.6VDC
V 3	12SK7GT	0V.	24VAC	0V.	-.6VDC	0V.	80VDC	12VAC	80VDC
V 4	12SQ7GT	0V.	-.5VDC	0V.	-.5VDC	-.6VDC	45VDC	12VAC	0V.
V 5	35L6GT	0V.	85VAC	110VDC	80VDC	0V.	0V.	50VAC	5VDC
V 6	35Z5GT	0V.	117VAC	110VAC	0V	110VAC	115VDC	85VAC	115VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SK7GT	330KΩ	54Ω	0Ω	1.5 Meg.	0Ω	†1.2KΩ	42Ω	†1.2KΩ
V 2	12SA7GT	330KΩ	42Ω	†1.2KΩ	†1.2KΩ	22KΩ	.7Ω	30Ω	1.5 Meg.
V 3	12SK7GT	330KΩ	30Ω	0Ω	1.5 Meg.	0Ω	†1.2KΩ	18Ω	†1.2KΩ
V 4	12SQ7GT	330KΩ	3.3 Meg.	0Ω	500KΩ	1.5 Meg.	†330KΩ	18Ω	0Ω
V 5	35L6GT	Inf.	90Ω	†120Ω	†1.2KΩ	500KΩ	Inf.	54Ω	150Ω
V 6	35Z5GT	Inf.	110Ω	108Ω	Inf.	108Ω	†15Ω	90Ω	600KΩ

† MEASURED FROM PIN 8 OF V6.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

ARVIN MODELS 480TFM,
481TFM (Ch. RE-277, RE-277-1)

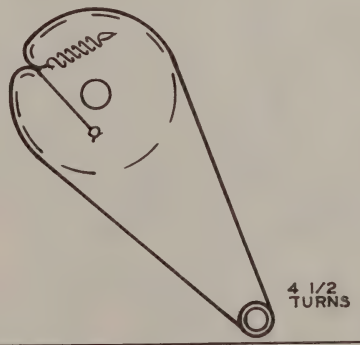
PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

ARVIN MODELS 480TFM,
481TFM (Ch. RE-277, RE-277-1)

ARVIN MODEL 480TFM

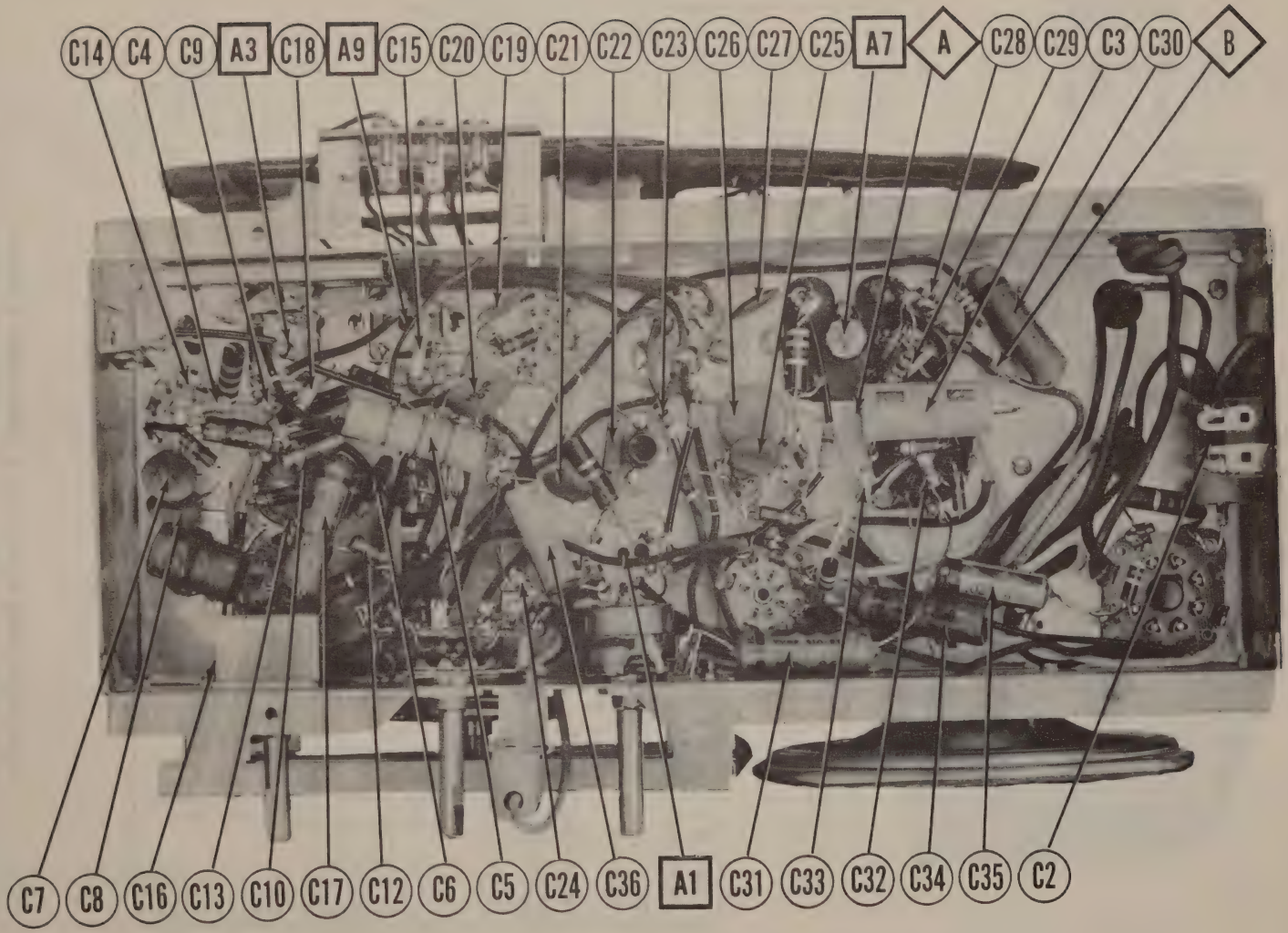
TRADE NAME	Arvin, Models 480TFM, 481TFM (Ch. RE-277, RE-277-1)
MANUFACTURER	Arvin Industries Inc., Columbus, Indiana
TYPE SET	AC-[illegible] Operated AM-FM Superheterodyne Receiver with Loop Antenna
TUBES(EIGHT)	Types 6BA6 FM RF Amp., 12AT7 FM Converter, 6BE6 AM Converter, 6BA6 1st IF Amp., 6BA6 2nd FM IF Amp., 6T8 DET-AVC-AF, 6V6GT Power Output, 6X4 Rectifier
POWER SUPPLY	110-120 Volts AC — RATING .37 Amp. at 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC — FREQ. MOD. 88-108MC

TUNING GANG FULLY CLOSED



DIAL CORD DRIVE

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1950 by Howard W. Sams & Co., Inc., Indianapolis 1, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America


C14
C4
C9
A3
C18
A9
C15
C20
C19
C21
C22
C23
C26
C27
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A7
A
C28
C29
C3
C30
B
C7
C8
C16
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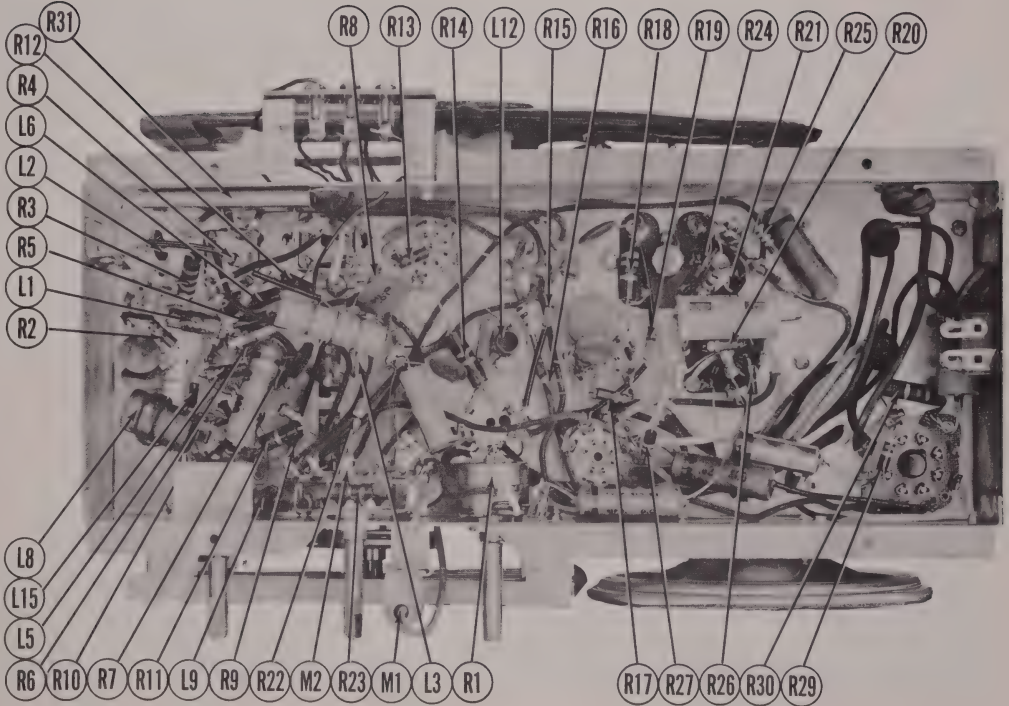
C32
C34
C35
C2


R31
R12
R4
L6
L2
R3
R5
L1
R2
L8
L15
L5
R6
R10
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R11
L9
R9
R22
M2
R23
M1
L3
R1
R8
R13
R14
L12
R15
R16
R18
R19
R24
R21
R25
R20
R17
R27
R26
R30
R29

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	FM RF Amp.	6BA6	6BA6	7BK	
V2	FM Converter	12AT7	12AT7	9A	
V3	AM Converter	6BE6	6BE6	7CH	
V4	1st IF Amp.	6BA6	6BA6	7BK	
V5	2nd FM IF Amp.	6BA6	6BA6	7BK	
V6	DET-AVC-AF	6T8	6T8	9E	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	6X4	6X4	5BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: ARVIN PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	250	A22806	AF844F		UP42225		TVL-3540	■ Filter
B	20	250							▲ Filter
C	20	250							Filter
C2	10	25	A22602	PRS25/10		BR102A		TVA-1204	Output Cathode
C3	4	25	A22659	PRS150/4		BR550		TVA-1203	Stabilizing Cap.
C4	47		C20203-470	SI47	D6-470	5W5Q5	GP1K-47	19C25	Ant. Coupling
C5	.047	200	C20067-503	P288-047	DF-503	PTE4S5		2TM-473	AVC Filter
C6	5000		A21674	BPD-005	DD-502	1D5D5	811-005	29C1	AVC Filter
C7	10000		A22295	BPD-01	DD-103	PTE4S1	811-01	36C1	FM RF Cath.
C8	5000		A21674	BPD-005	DD-502	1D5D5	811-005	29C1	FM RF Screen
C9	100		C20203-101	SI100	D6-101	5W5T1	GP1K-100	19C11	RF Coupling
C10	1000		C20203-102	SI1000	D6-102	1W5D1	GP2L-001	19C1	Conv. Cath. Byp.
C11	1.5		A20238-3	SI1.5NPO	TCZ-1.5		NPOK-1.5		Osc. Coupling
C12	50		C20205-3	SI50	D6-500	5W5Q5	GP1K-50	19C28	Osc. Grid Cap.
C13	1000		C20203-102	SI1000	D6-102	1W5D1	GP2L-001	19C1	Osc. Plate Byp.
C14	1000		C20203-102	SI1000	D6-102	1W5D1	GP2L-001	19C1	FM RF Dec.
C15	1000		C20203-102	SI1000	D6-102	1W5D1	GP2L-001	19C1	FM Conv. Plate Dec.
C16	47		C20203-470	SI47	D6-470	5W5Q5	GP1K-47	19C25	Osc. Grid Cap.
C17	.01	400	C20068-103	P488-01	D6-103	PTE4S1	811-01	4TM-11	Osc. Anode Bypass
C18	1000		C20203-102	SI1000	D6-102	1W5D1	GP2L-001	19C1	AVC Filter
C19	5000		A21674	BPD-005	DD-502	1D5D5	811-005	29C1	1st IF Cath.
C20	10000		A22295	BPD-01	DD-103	PTE4S1	811-01	36C1	1st IF Screen
C21	5000		A21674	BPD-005	DD-502	1D5D5	811-005	29C1	1st IF Dec.
C22	22	500			TCZ-22		NPOK-22	29C12	Fixed Trimmer
C23	15		C20203-150	SI15	D6-150		GP1K-15	19C22	IF Coupling
C24	100		C20203-101	SI100	D6-101	5W5T1	GP1K-100	19C11	Diode RF Filter
C25	5000		A21674	BPD-005	DD-502	1D5D5	811-005	29C1	2nd IF Cath.
C26	10000		A22295	BPD-01	DD-103	PTE4S1	811-01	36C1	2nd IF Screen
C27	5000		A21674	BPD-005	DD-502	1D5D5	811-005	29C1	2nd IF Dec.
C28	100		C20203-101	SI100	D6-101	5W5T1	GP1K-100	19C11	Diode Load Cap. *
C29	100		C20203-101	SI100	D6-101	5W5T1	GP1K-100	19C11	Diode Load Cap. *
C30	.003	600	C20069-302	P688-003	D6-302	PTE6D3	GP2M-003	6TM-23	De-emphasis
C31	.01	400	C20068-103	P488-01	D6-103	PTE4S1	811-01	4TM-11	Audio Coupling
C32	220		C20203-221	SI220	D6-221	5W5T2	GP2K-220	19C13	AF Amp. Grid
C33	100		C20203-101	SI100	D6-101	5W5T1	GP1K-100	19C11	AF Amp. Plate
C34	.02	400	C20068-203	P488-02	DF-203	PTE4S2		4TM-12	Audio Coupling
C35	.02	400	C20068-203	P488-02	DF-203	PTE4S2		4TM-12	Output Plate †
C36	.01	400	C20249-103	P488-01	D6-103	PTE4S1	811-01	4TM-11	Line Filter

* When either items C28 or C29 are replaced, replace both with capacitors of equal value.
† Some models use .0005MFD in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: ARVIN PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	B22963	Q13-133	AG-60-Z	B-60-S	Volume control
B	Shaft		Not Req	Not Req	FS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req	76-1	SWB	Not Req.	Attach to R1A per instructions

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA: MEISSNER PART No.	
L1	FM Ant.	.1Ω		AA22648-1		
L2	RF Choke	.7Ω		AA21445-1		
L3	FM RF	0Ω		A22593		
L4	FM Osc.	0Ω		A22594		
L5	RF Choke	.5Ω		AA22597-1		
L6	Para. Supp.	0Ω		AA22345-1		
L7	Loop Ant.	.3Ω	2Ω	D22586		
L8	AM Osc.	.7Ω	7.8Ω	AC22587-1	14-1073	
L9	Para. Supp.	.1Ω		AA22334-1		
L10	1st FM IF	1.6Ω	1.4Ω	C22590	16-3487	
L11	1st AM IF	10Ω	10Ω	C 22352	16-6758	
L12	2nd FM IF	.6Ω		AC22967-1		
L13	2nd AM IF	10Ω	10Ω	C22352	16-6758	
L14	Ratio Det. Trans.	.9Ω	.1Ω	AD22592-1	17-3487	
L15	Fil. Choke	1Ω		A21673		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: ARVIN PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8	.15	Brown	19351		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	ARVIN PART No.	NOTES
M2	Switch	C22961	AM-FM
M3	2 Gang Var. Cap.	N22962	(31-542MMF, 13-162MMF)
	Dial Crystal	E23241-1	
	Dial Pointer	D23242	

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

SET 107
FOLDER 4

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer parallel with base of dial.

AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to pin 7 (Grid) of 6BE6 (V3). Low side to chassis.	455KC (400 ∿ Mod.)	AM (fully CCW)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	.05MFD	"	1650KC	"	"	"	A5,	"
3.		Loop	1400KC	"	Tune for max. output	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (± 1%) resistors in series from Point A to chassis. The junction of these two resistors is alignment Point (C) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 7 (Grid) of 12AT7 (V2). Low side to chassis.	10.7MC (Unmod.)	FM (fully CW)	Tuning gang fully open	DC Probe to Point (A). Common to chassis.	A7, A8, A9, A10	Adjust for maximum deflection.
5.	.01MFD	"	"	"	"	DC Probe to Point (B). Common to Point (C).	A11	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to pin 7 (Grid) of 12AT7 (V2). Low side to chassis.	10.7MC (10MC Sweep)	FM (fully CW)	Tuning gang fully open	Vert. Amp. to Point (A). Low side to chassis.	A7, A8, A9, A10	Disconnect stabilizer capacitor C3. Adjust for maximum amplitude and symmetry as per fig. 1.
5.	.01MFD	"	"	"	"	Vert. Amp. to Point (B). Low side to chassis.	A11	Reconnect capacitor C3. Adjust A-11 to place 10.7MC at center of crossover lines as per fig. 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
6.	Two 150Ω carbon res.	Across antenna terminals with 150Ω in each lead.	108.5MC	FM (fully CW)	Tuning gang fully open	DC Probe to Point (A). Low side to chassis.	A12	Adjust for maximum deflection.
7.	"	"	87.5MC	"	Tuning gang fully closed	"	L4	Expand or compress coil turns for maximum deflection.
8.	"	"	105MC	"	Tune for max. deflection.	"	A13	Adjust for maximum deflection.
9.	"	"	90MC	"	"	"	L3	Expand or compress coil turns for maximum deflection. Repeat steps 6, 7, 8 and 9 until no further improvement can be made.

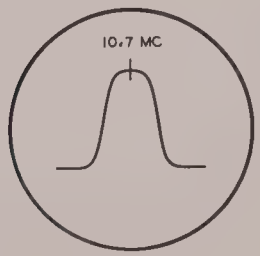


FIG. 1

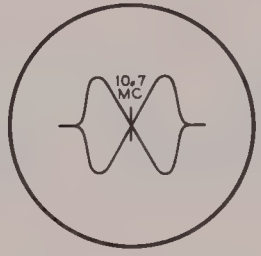
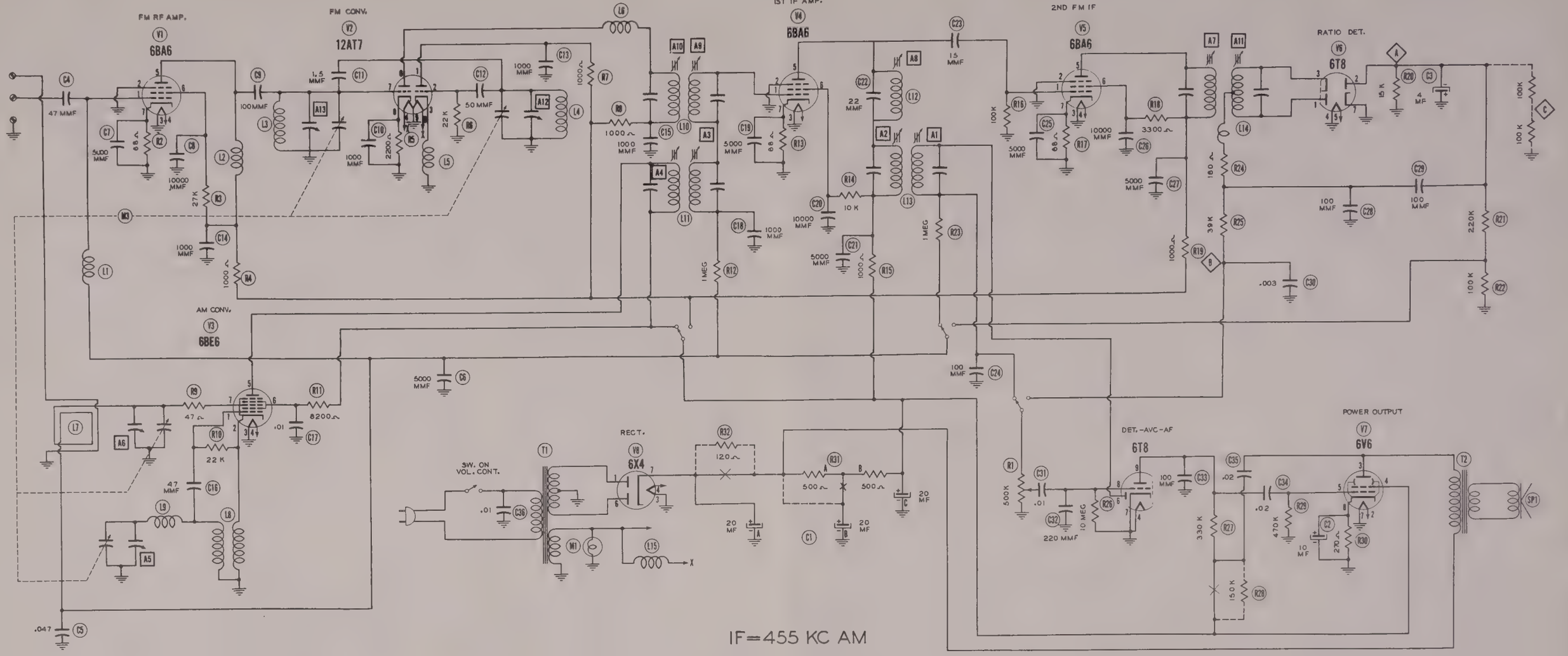


FIG. 2



IF=455 KC AM

IF=10.7 MC FM

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BA6	†-.1VDC	0V.	0V.	6.3VAC	†125VDC	†65VDC	†.6VDC		
V 2	12AT7	†130VDC	††-1.7VDC	†0V.	6.3VAC	6.3VAC	†130VDC	†0V.	††2.2VDC	0V.
V 3	6BE6	▲§-6.7VDC	▲0V.	0V.	6.3VAC	▲165VDC	▲95VDC	▲-.5VDC		
V 4	6BA6	†-.1VDC ▲-.2VDC	0V.	0V.	6.3VAC	†125VDC ▲150VDC	†90VDC ▲110VDC	.9VDC		
V 5	6BA6	†0V.	0V.	0V.	6.3VAC	†125VDC	†110VDC	†.9VDC		
V 6	6T8	†-.4VDC	†-.6VDC	†-.4VDC	0V.	6.3VAC	-.4VDC	0V.	-.4VDC	†55VDC ▲65VDC
V 7	6V6GT	0V.	6.3VAC	†175VDC ▲185VDC	†140VDC ▲165VDC	0V.	110VAC	0V.	†5.8VDC ▲7.4VDC	
V 8	6X4	185VAC	-.6VDC	0V.	6.3VAC	†135VDC ▲170VDC	185VAC	†180VDC ▲195VDC		

§ TAKEN WITH VACUUM TUBE VOLTMETER.

† TAKEN IN "FM" POSITION.
▲ TAKEN IN "AM" POSITION.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BA6	†90KΩ	0Ω	0Ω	.1Ω	††2KΩ	††29KΩ	†68Ω		
V 2	12AT7	††2KΩ	†22KΩ	†.5Ω	.1Ω	.1Ω	††2KΩ	†0Ω	††2.2KΩ	0Ω
V 3	6BE6	▲22KΩ	▲.7Ω	0Ω	.1Ω	▲†1000Ω	▲†9.2KΩ	▲1.5 Meg.		
V 4	6BA6	†1.1 Meg. ▲2.5 Meg.	0Ω	0Ω	.1Ω	†2KΩ	†12KΩ	68Ω		
V 5	6BA6	†100KΩ	0Ω	0Ω	.1Ω	††2KΩ	††5.3KΩ	†68Ω		
V 6	6T8	†540KΩ	†15KΩ	†540KΩ	0Ω	.1Ω	† Inf. ▲500KΩ	0Ω	10 Meg	330KΩ
V 7	6V6GT	Inf.	.1Ω	†270Ω	†1000Ω	470KΩ	Inf.	0Ω	270Ω	
V 8	6X4	180Ω	Inf.	0Ω	.1Ω	†1000Ω	180Ω	120KΩ		

† MEASURED FROM PIN 7 OF V8.

THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ARVIN PART No.	IRC PART No.	
R2	68Ω	½	C20060-680	BW-½-68	FM RF Amp. Cathode
R3	27KΩ	1	C20070-273	BTA-27K	FM RF Amp. Screen
R4	1000Ω	½	C20060-102	BTS-1000	FM RF Amp. Decoupling
R5	2200Ω	½	C20060-222	BTS-2200	FM Conv. Cathode
R6	22KΩ	½	C20060-223	BTS-22K	FM Osc. Grid
R7	1000Ω	½	C20060-102	BTS-1000	FM Osc. Plate
R8	1000Ω	½	C20060-102	BTS-1000	FM Conv. Plate Decoup.
R9	47Ω	½	C20060-470		Parasitic Suppressor
R10	22KΩ	½	C20060-223	BTS-22K	AM Osc. Grid
R11	8200Ω	1	C20070-822	BTA-8200	AM Osc. Anode
R12	1 Meg.	½	C20060-105	BTS-1 Meg.	AVC Network
R13	68Ω	½	C20060-680	BW-½-68	1st IF Amp. Cathode
R14	10KΩ	1	C20070-103	BTA-10K	1st IF Amp. Screen
R15	1000Ω	½	C20060-102	BTS-1000	1st IF Amp. Decoupling
R16	100KΩ	½	C20060-104	BTS-100K	2nd IF Amp. Grid
R17	68Ω	½	C20060-680	BW-½-68	2nd IF Amp. Cathode
R18	3300Ω	1	C20070-332	BTA-3300	2nd IF Amp. Screen
R19	1000Ω	½	C20060-102	BTS-1000	2nd IF Amp. Decoup.
R20	15KΩ	½	C22381-153	BTS-15K	Ratio Det. Diode Load
R21	220KΩ	½	C20060-224	BTS-220K	AVC Network
R22	100KΩ	½	C20060-104	BTS-100K	AVC Network
R23	1 Meg.	½	C20060-105	BTS-1 Meg.	AVC Network
R24	180Ω	½	C20060-181	BTS-180	Balancing
R25	39KΩ	½	C20120-393	BTS-39K	De-emphasis
R26	10 Meg.	½	C20060-106	BTS-10 Meg.	AF Amp. Grid
R27	330KΩ	½	C20060-334	BTS-330K	AF Amp. Plate
R28	150KΩ	½	C20060-154	BTS-150K	AF Amp. Plate-See Note 1
R29	470KΩ	½	C20060-474	BTS-470K	Output Grid
R30	270Ω	1	C20070-271	BTA-270	Output Cathode
R31A	500Ω	5	A22624	1 3/4AA-1000*	Filter-Wire Wound
B	500Ω				Filter-Wire Wound
R32	120Ω	1	A23933	BTA-120	Filter-See Note 1

* Set slider 500Ω from one end of resistor.
Note 1. Not used in all models.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ② .37A	350VCT .050ADC	6.3VAC ② 3.4A		D22959			PV-70 ④

④ Drill new mtg. holes.

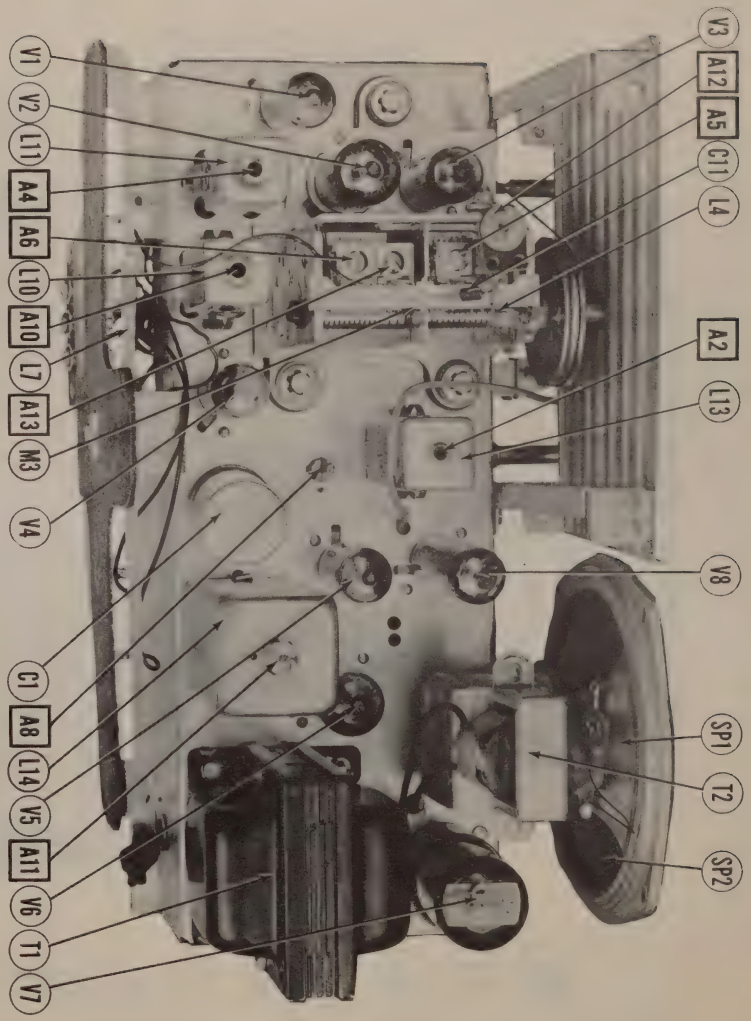
TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ARVIN PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	7500Ω	3.8Ω	270Ω	.7Ω	AC22995-1	A-3879 ④		RO-13	④ Drill new mtg. holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			ARVIN PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V. C. IMP.	C22760	ST-113 ① ③ MOD. P4-X	4A07 ① ②	① Remount output transformer. ② Use universal mounting bracket provided. ③ Fabricate new mounting bracket.
	PM	3.8Ω				
	CONE DIA.	V. C. DIA.				
SP2	4 1/2"	9/16"				

CHASSIS—BOTTOM VIEW



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HALLICRAFTERS MODELS

605, 606

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MODEL 605

HALLICRAFTERS MODELS

605, 606

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HALLICRAFTERS MODEL 605

TRADE NAME	Hallicrafters, Models 605, 606
MANUFACTURER	Hallicrafters Co., 5th and Kostner Ave., Chicago, Illinois
TYPE SET	TV-FM Receiver
TUBES	Twenty-Five

POWER SUPPLY 105-125 Volts AC-60 Cycle RATING 2.4 Amp. at 117 Volts AC
TUNING RANGE—54 thru 216MC (Continuous Tuning)

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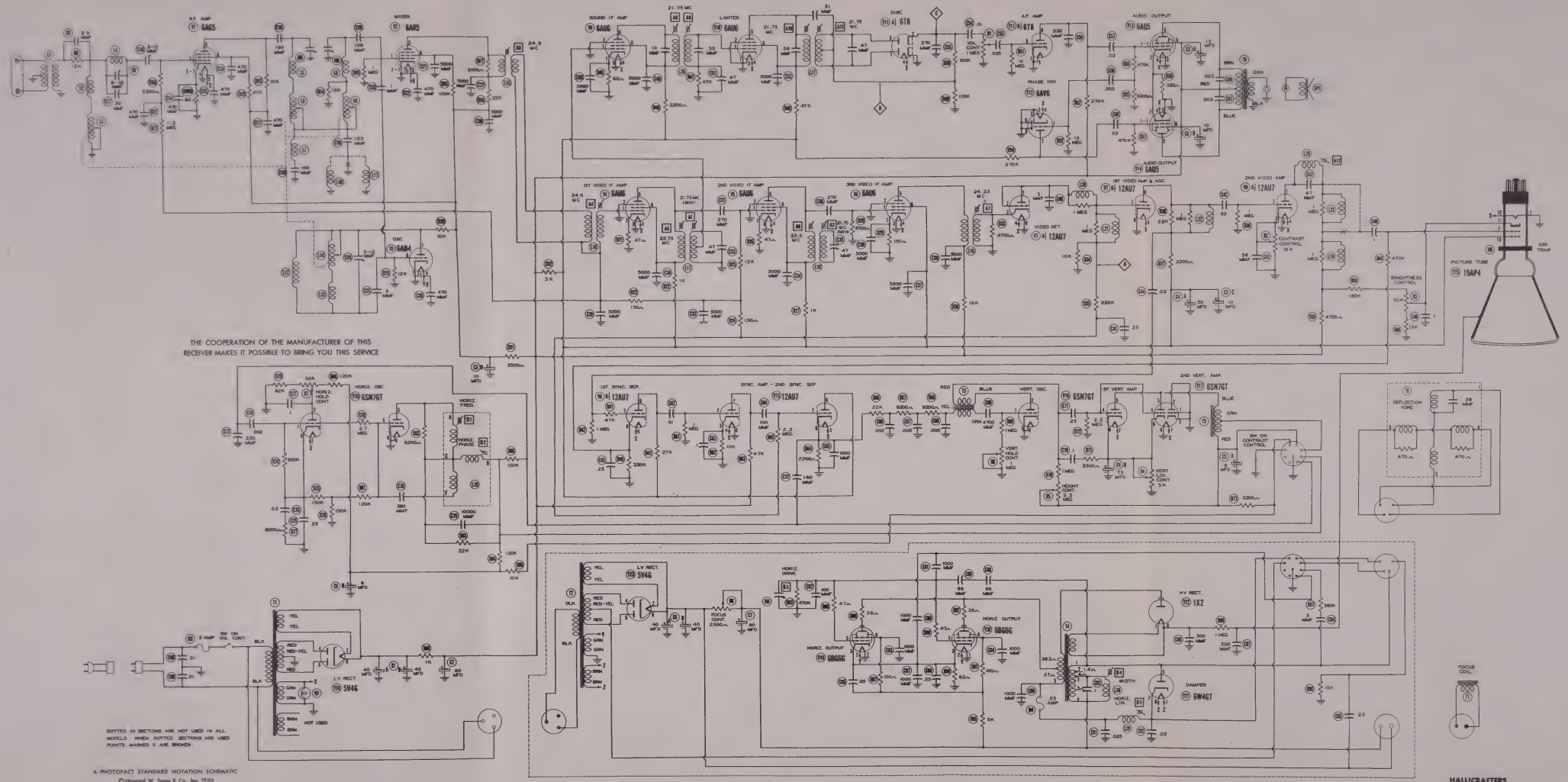
MODELS 605, 606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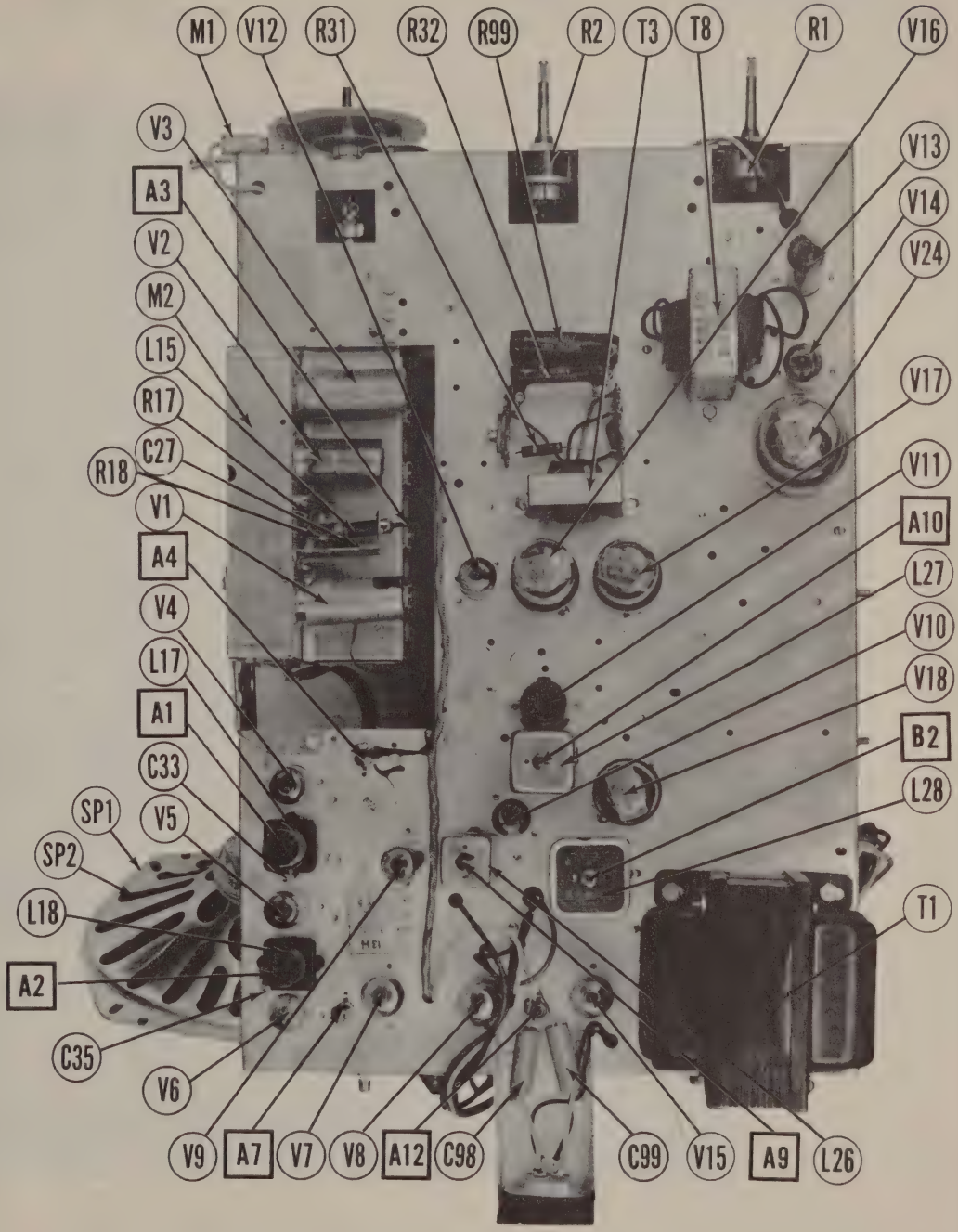

CHASSIS TOP VIEW

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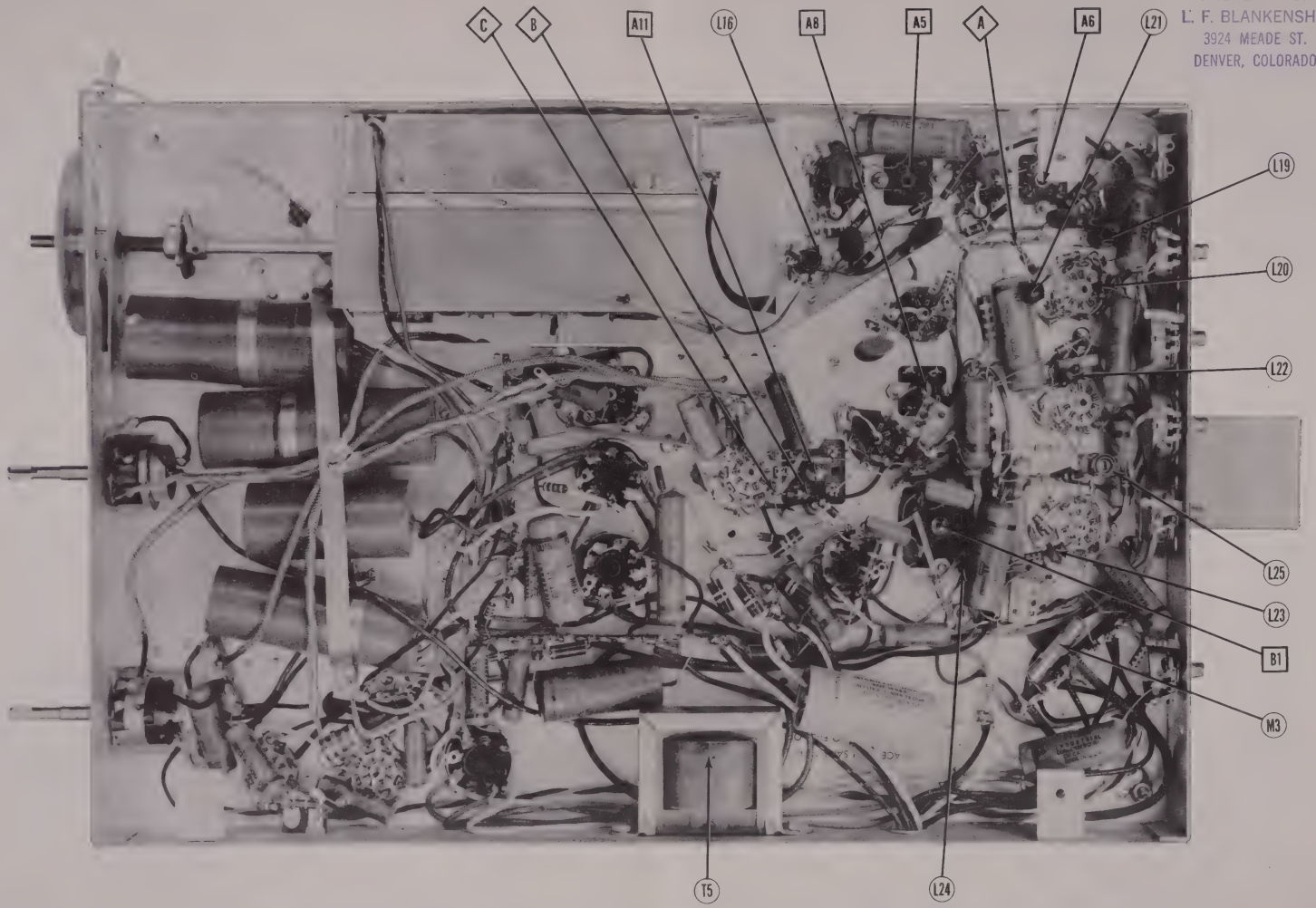

CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

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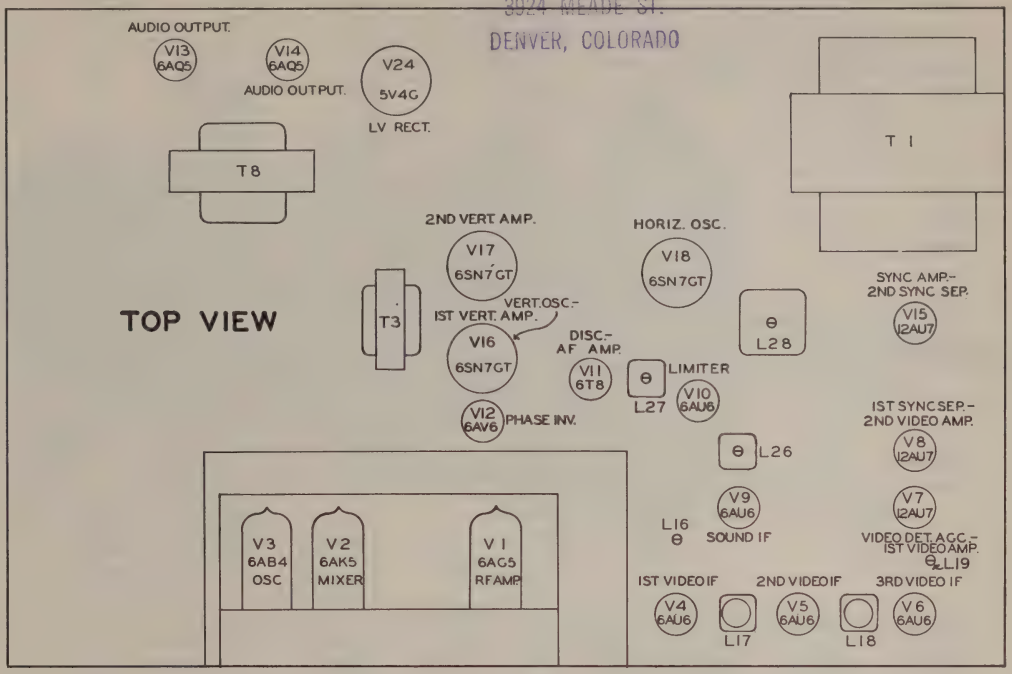

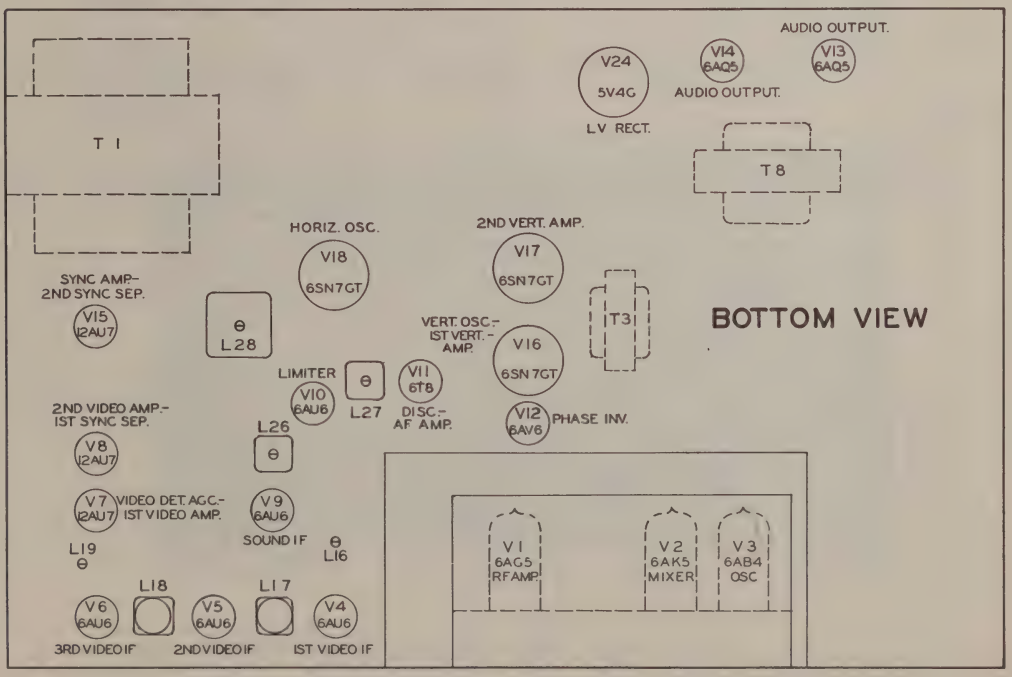

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube (V18) from its socket.
Do not attempt to operate this receiver without all of the connecting cables in place.

VIDEO IF ALIGNMENT

Remove the local oscillator tube (V3) from its socket to prevent erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	21.75MC	Any	DC Probe to Point (A). Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	Direct	"	27.75MC	"	"	A2	"
3.	Direct	"	24MC	"	"	A3, A4	Adjust for maximum deflection.
4.	Direct	"	22.75MC	"	"	A5	"
5.	Direct	"	25.5MC	"	"	A6	"
6.	Direct	"	24.25MC	"	"	A7	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	25MC (10MC SWP)	21.75MC 26.25MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary retouch A3 thru A7 for optimum response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	21.75MC (Unmod.)	Any	DC Probe thru 1 Meg. to Point (B). Common to chassis.	A8, A9, A10	Adjust for maximum deflection. Connect a 1000Ω resistor across terminals C and D of L26 while adjusting A8. Remove the resistor from terminals C and D, and connect across terminals A and B when adjusting A9. Remove the resistor and adjust A10.
9.	Direct	"	"	"	DC Probe to Point (C). Common to chassis.	All	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	21.75MC (450KC Sweep)	21.75MC	Any	Vert. Amp. thru 1 Meg. to Point (B). Low side to chassis.	A8, A9, A10	Adjust for maximum amplitude and symmetry as per figure 2.
9.	Direct	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	All	Adjust All so 21.75MC marker occurs at center of crossover lines as per fig. 3. SLIGHTLY retouch A10 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

Replace the local oscillator tube in its socket.
Turn the set on and tune in a test pattern. Adjust the 4.5MC trap (A12) for maximum vertical wedge definition.

THE ADJUSTMENTS IN THE RF TUNER PORTION OF THIS RECEIVER HAVE BEEN PRE-SET AT THE FACTORY AND ARE VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE REQUIRED IN THE FIELD.

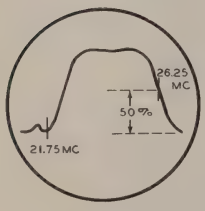

FIG. 1

FIG. 2

FIG. 3

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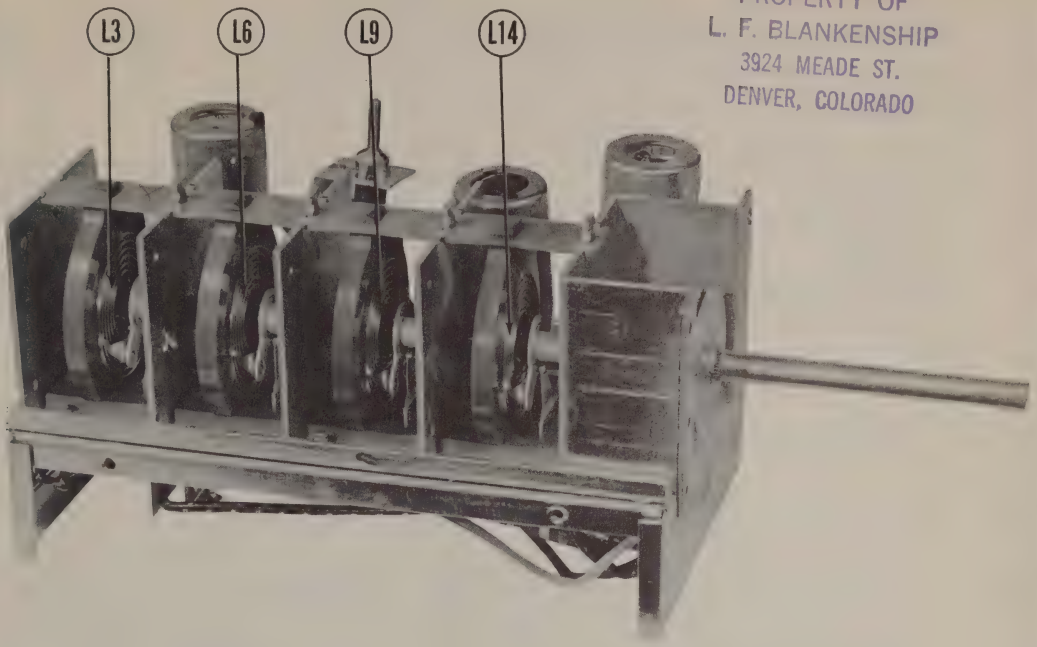
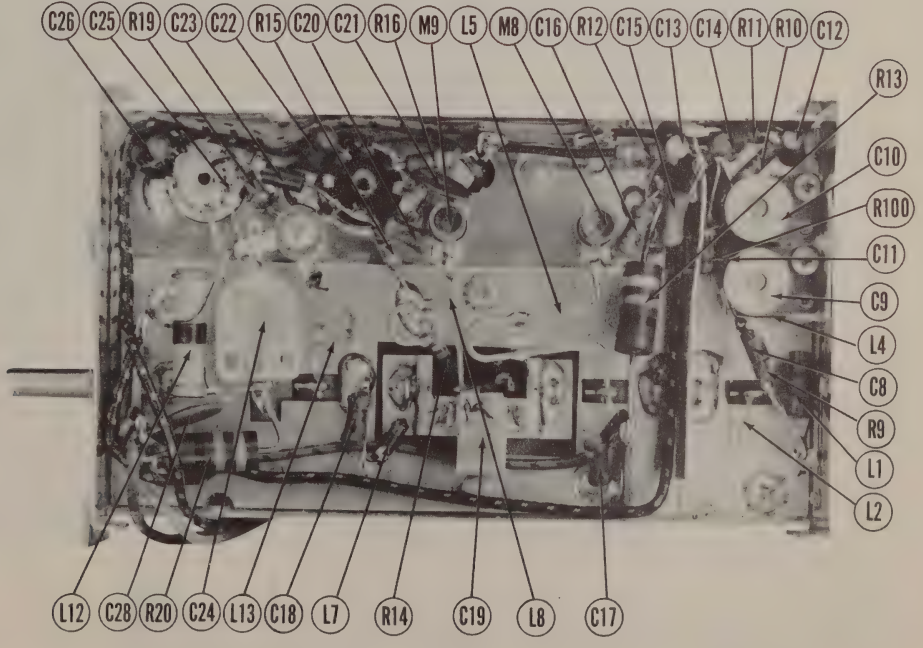


RF TUNER - TOP VIEW



RF TUNER - BOTTOM VIEW

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.1VDC	.6VDC	6.3VAC	0V.	145VDC	120VDC	.6VDC		
V 2	6AK5	-.8VDC	0V.	0V.	6.3VAC	215VDC	210VDC	0V.		
V 3	6AB4	125VDC	0V.	0V.	6.3VAC	0V.	§-4.6VDC	0V.		
V 4	6AU6	-.6VDC	0V.	0V.	6.3VAC	115VDC	115VDC	.4VDC		
V 5	6AU6	-.4VDC	0V.	0V.	6.3VAC	115VDC	115VDC	.4VDC		
V 6	6AU6	0V.	0V.	0V.	6.3VAC	175VDC	125VDC	1VDC		
V 7	12AU7	-.4VDC	-.4VDC	0V.	6.3VAC	6.3VAC	100VDC	-.4VDC	0V.	0V.
V 8	12AU7	250VDC	0V.	15VDC	6.3VAC	6.3VAC	125VDC	0V.	10VDC	0V.
V 9	6AU6	0V.	0V.	0V.	6.3VAC	110VDC	110VDC	.5VDC		
V 10	6AU6	-.5VDC	0V.	0V.	6.3VAC	32VDC	32VDC	0V.		
V 11	6T8	-.4VDC	-.4VDC	-.1VDC	6.3VAC	0V.	0V.	0V.	-.5VDC	75VDC
V 12	6AV6	0V.	0V.	0V.	6.3VAC	0V.	0V.	190VDC		
V 13	6AQ5	0V.	17VDC	6.3VAC	0V.	255VDC	260VDC	0V.		
V 14	6AQ5	0V.	17VDC	6.3VAC	0V.	255VDC	260VDC	0V.		
V 15	12AU7	205VDC	0V.	11VDC	6.3VAC	6.3VAC	125VDC	-.1VDC	5VDC	0V.
V 16	6SN7GT	-2.4VDC -2.1VDC	135VDC 55VDC	0V.	0V.	260VDC	21VDC .3VDC	6.3VAC	0V.	
V 17	6SN7GT	0V.	0V.	0V.	0V.	260VDC	21VDC .3VDC	6.3VAC	0V.	
V 18	6SN7GT	-2.2VDC	160VDC 105VDC	-13VDC	-38VDC	145VDC	0V.	6.3VAC	0V.	
V 19	6BG6G	0V.	6.3VAC	9VDC	200VDC	-5.4VDC	300VDC	0V.	200VDC	TOP CAP *
V 20	6BG6G	200VDC	6.3VAC	9VDC	0V.	-5.4VDC	200VDC	0V.	200VDC	TOP CAP *
V 21	6W4GT	0V.	0V.	380VDC	140VDC	300VDC	130VDC	¶	¶	
V 22	1X2	* DO NOT MEASURE.								
V 23	5V4G	0V.	375VDC	0V.	320VAC	0V.	320VAC	0V.	375VDC	
V 24	5V4G	0V.	380VDC	0V.	320VAC	0V.	320VAC	0V.	380VDC	
V 25	19AP4	0V.	3.2VDC	PIN 10 125VDC	PIN 11 50VDC	PIN 12 6.3VAC				

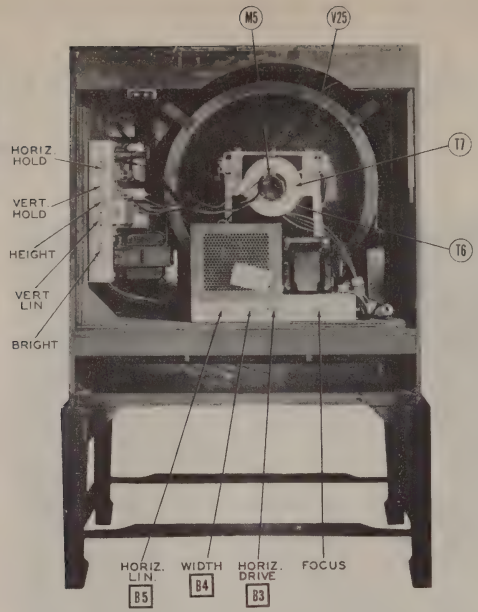
FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
FM-TV SWITCH IN "ON" POSITION.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
¶ 6.3VAC MEASURED ACROSS FILAMENTS.
* DO NOT MEASURE.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	1.4 Meg.	82Ω	.1Ω	0Ω	†14KΩ	†51KΩ	82Ω		
V 2	6AK5	1 Meg.	0Ω	0Ω	.1Ω	†26KΩ	†155KΩ	0Ω		
V 3	6AB4	†14KΩ	Inf.	0Ω	.1Ω	Inf.	12KΩ	0Ω		
V 4	6AU6	230KΩ	0Ω	0Ω	.1Ω	†5KΩ	†5KΩ	47Ω		
V 5	6AU6	242KΩ	0Ω	0Ω	.1Ω	†5KΩ	†5KΩ	47Ω		
V 6	6AU6	4.7KΩ	0Ω	0Ω	.1Ω	†19KΩ	†4KΩ	150Ω		
V 7	12AU7	10KΩ	10KΩ	.5Ω	.1Ω	.1Ω	†6.2KΩ	10KΩ	0Ω	0Ω
V 8	12AU7	†5.7KΩ	1 Meg.	10KΩ	.1Ω	.1Ω	†3KΩ	1 Meg.	330KΩ	0Ω
V 9	6AU6	0Ω	0Ω	0Ω	.1Ω	†6.2KΩ	†6.2KΩ	82Ω		
V 10	6AU6	47KΩ	0Ω	0Ω	.1Ω	†5KΩ	†5KΩ	0Ω		
V 11	6T8	100KΩ	100KΩ	200KΩ	.1Ω	0Ω	0Ω	0Ω	10 Meg.	†270KΩ
V 12	6AV6	10 Meg.	0Ω	0Ω	.1Ω	0Ω	0Ω	†275KΩ		
V 13	6AQ5	478KΩ	330Ω	0Ω	.1Ω	†1.3KΩ	†1000Ω	478KΩ		
V 14	6AQ5	470KΩ	330Ω	0Ω	.1Ω	†1.3KΩ	†1000Ω	470KΩ		
V 15	12AU7	†48KΩ	1 Meg.	10KΩ	.1Ω	.1Ω	†4KΩ	2.4 Meg.	2.2KΩ	0Ω
V 16	6SN7GT	1 Meg. 2 Meg.	#1 Meg. #3.5 Meg.	0Ω	2.2 Meg.	#3.5KΩ	9Ω 5KΩ	.1Ω	0Ω	
V 17	6SN7GT	0Ω	0Ω	0Ω	2.2 Meg.	#3.5KΩ	9Ω 5KΩ	.1Ω	0Ω	
V 18	6SN7GT	1 Meg.	82KΩ 120KΩ	320KΩ	300KΩ	#130KΩ	0Ω	.1Ω	0Ω	
V 19	6BG6G	Inf.	.1Ω	82Ω	♦5.6KΩ	470KΩ	10KΩ,	0Ω	♦5.6KΩ	TOP CAP #130Ω
V 20	6BG6G	♦5.6KΩ	.1Ω	82Ω	Inf.	470KΩ	♦.5.6KΩ	0Ω	♦5.6KΩ	TOP CAP #130Ω
V 21	6W4GT	Inf.	Inf.	#0Ω	#300KΩ	♦380Ω	#860KΩ	Inf.	Inf.	
V 22	1X2	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #500Ω
V 23	5V4G	Inf.	10KΩ	Inf.	40Ω	0Ω	40Ω	Inf.	10KΩ	
V 24	5V4G	Inf.	60KΩ	Inf.	42Ω	Inf.	42Ω	Inf.	60KΩ	
V 25	19AP4	0Ω	800KΩ	PIN 10 †4KΩ	PIN 11 12KΩ	PIN 12 .1Ω				

FM-TV SWITCH IN "ON" POSITION.
FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
† MEASURED FROM PIN 8 OF V24.
# MEASURED FROM PIN 3 OF V21.
♦ MEASURED FROM PIN 8 OF V23.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



CABINET-REAR VIEW
HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station preferably a test pattern, and adjust the vertical hold control to synchronize the picture vertically.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug (B1) until the picture synchronizes properly.

If the top adjustment screw (B2) on the horizontal oscillator transformer has been tampered with, turn it all the way out (counter-clockwise) and adjust B1 until the picture synchronizes.

Adjust the horizontal drive trimmer (B3) clockwise as far as possible without causing fold over in the picture.

Adjust the width slug (B4) until the picture fills the mask horizontally.

Adjust the horizontal linearity slug (B5) until the picture is symmetrical from left to right.

Readjustment of B3 may be required for optimum results.

DISASSEMBLY INSTRUCTIONS

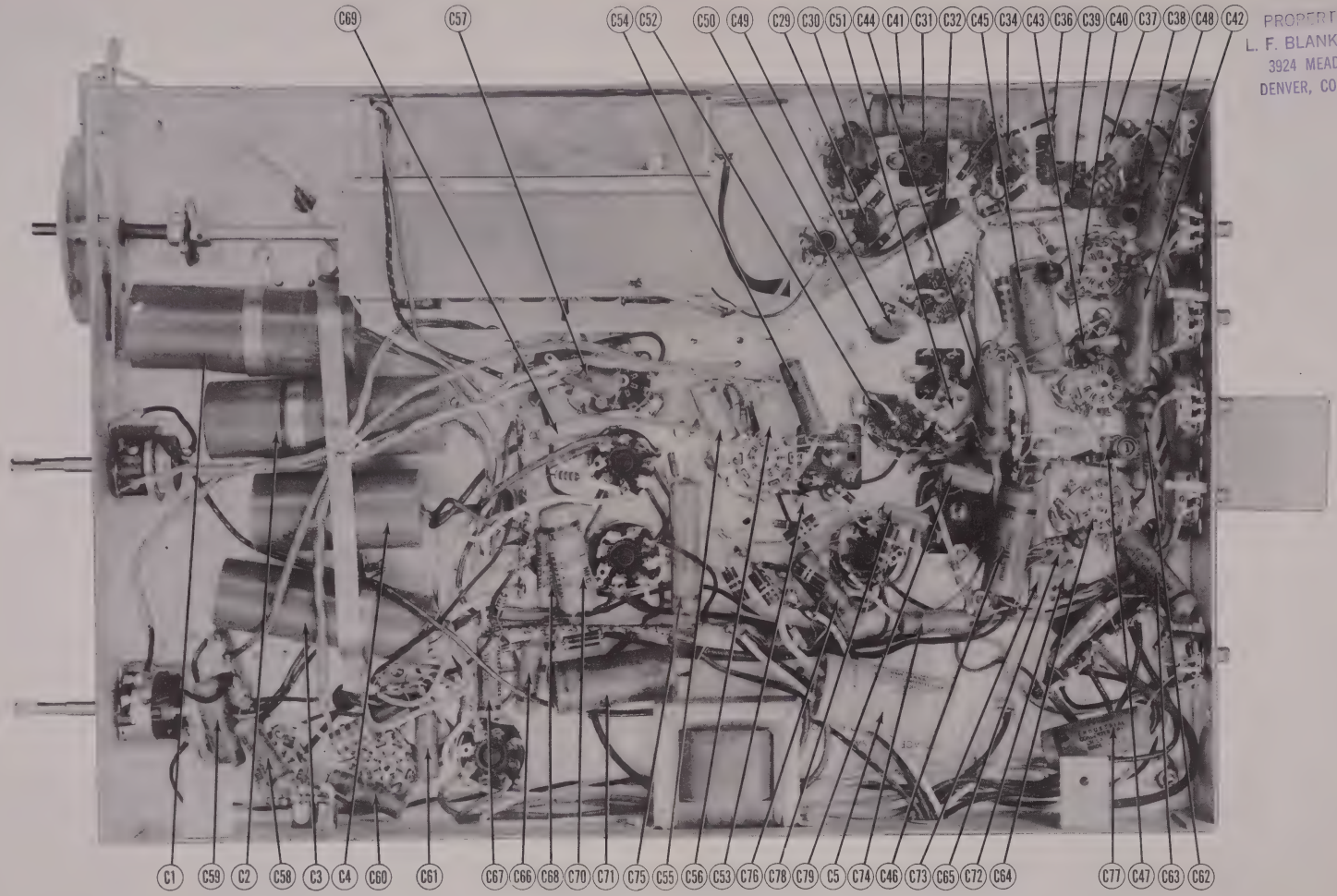
1. Remove four push-on type control knobs from front of set.
2. Remove ten phillips head and one 1/4" hex head screws holding rear cover. Remove cover.
3. Remove two phillips head screws holding antenna connection terminal to top of cabinet.
4. Remove 1/2" hex nut holding antenna tuning shaft to front of cabinet. Remove antenna tuning assembly from support bracket. Place assembly out of the way for chassis removal.
5. Remove phillips head screw holding support bracket to vertical mounting board.
6. Remove four large screws holding mounting board at bottom. Slide board out of cabinet.

POWER CHASSIS

1. Disconnect picture tube deflection yoke plug.
2. Disconnect power, focus and chassis connector plugs from power unit.
3. Remove snap-on type HV cap from picture tube.
4. Remove four screws holding power chassis to mounting board. Remove chassis.

RECEIVER CHASSIS

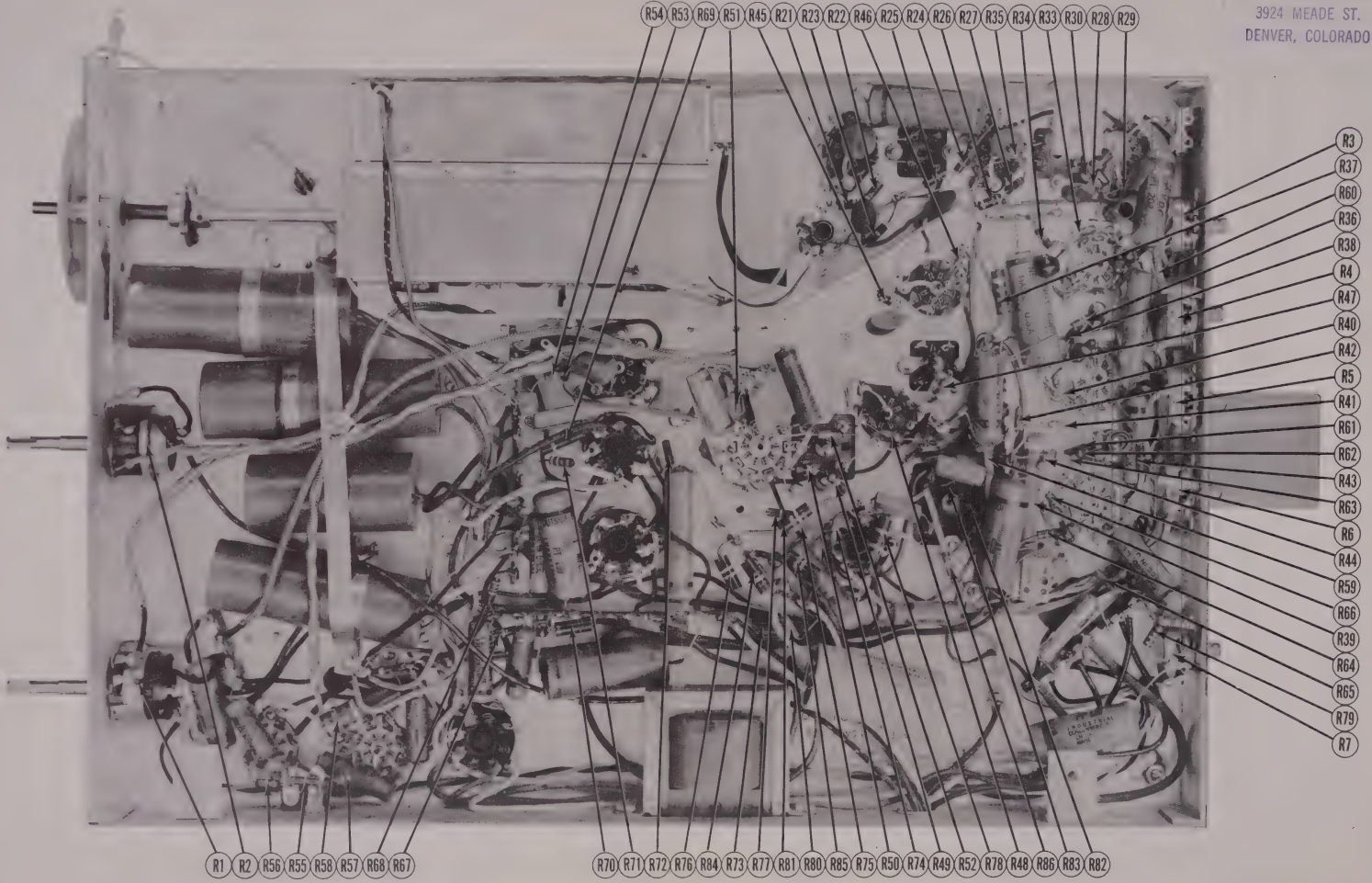
1. Remove stables holding cable guides and disconnect speaker at bayonet plug.
2. Disconnect picture tube socket.
3. Remove wing nut on top of focus coil support and remove ground lead.
4. Remove four screws holding chassis to vertical mounting board. Remove chassis.
5. Remove four phillips head screws holding speaker. Remove speaker.



PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

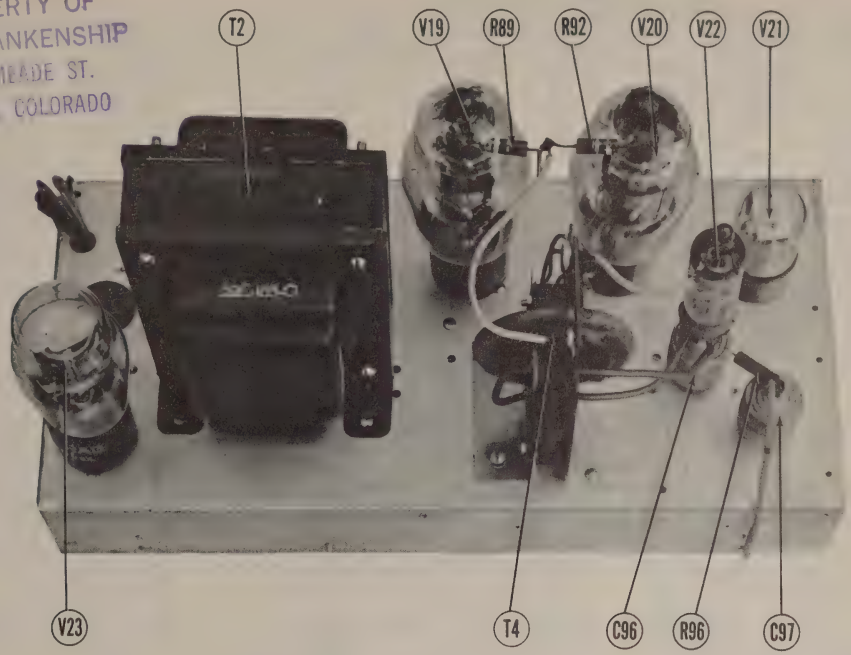
CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

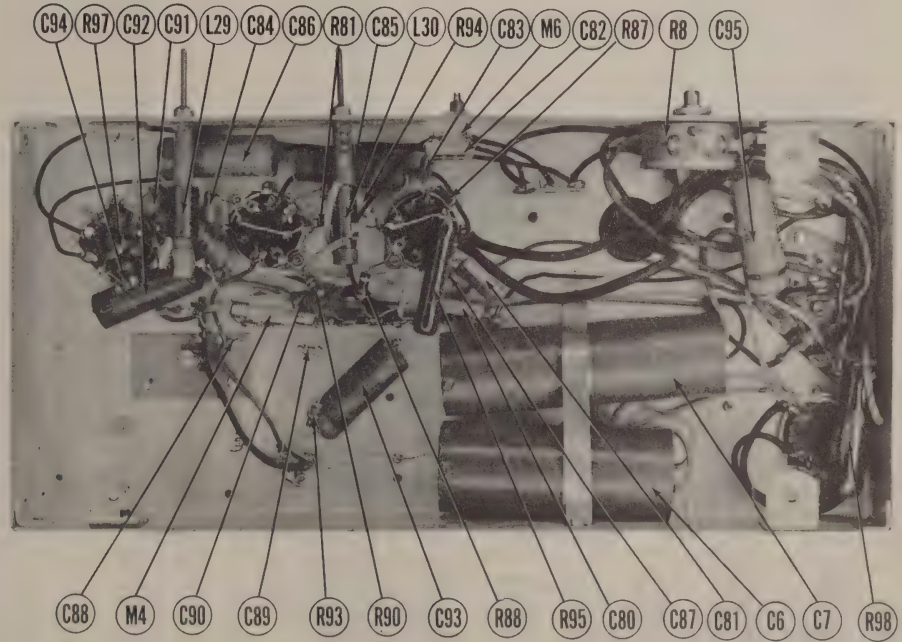


CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PROPERTY OF
F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



HIGH VOLTAGE SUPPLY-TOP VIEW



HIGH VOLTAGE SUPPLY-BOTTOM VIEW

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: HALLICRAFTER PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6AG5	6AG5	7BD	
V2	Mixer	6AK5	6AK5	7BD	
V3	Oscillator	6AB4	6AB4	5CE	
V4	1st Video IF	6AU6	6AU6	7BK	
V5	2nd Video IF	6AU6	6AU6	7BK	
V6	3rd Video IF	6AU6	6AU6	7BK	
V7	Video Det.-AGC-1st Video Amp.	12AU7	12AU7	9A	
V8	2nd Video Amp.-1st Sync. Sep.	12AU7	12AU7	9A	
V9	Sound IF Amp.	6AU6	6AU6	7BK	
V10	Limiter	6AU6	6AU6	7BK	
V11	Disc.-AF Amp.	6T8	6T8	9E	
V12	Phase Inv.	6AV6	6AV6	7BT	
V13	Audio Output	6AQ5	6AQ5	7BZ	
V14	Audio Output	6AQ5	6AQ5	7BZ	
V15	Sync. Amp.-2nd Sync. Sep.	12AU7	12AU7	9A	
V16	Vert. Osc.-1st Vert. Amp.	6SN7GT	6SN7GT	8BD	
V17	2nd Vert. Amp.	6SN7GT	6SN7GT	8BD	
V18	Hor. Osc.	6SN7GT	6SN7GT	8BD	
V19	Hor. Output	6BG6G	6BG6G	5BT	
V20	Hor. Output	6BG6G	6BG6G	5BT	
V21	Damper	6W4GT	6W4GT	4CG	
V22	HV Rect.	1X2	1X2	7CB	
V23	LV Rect.	5V4G	5V4G	5L	
V24	LV Rect.	5V4G	5V4G	5L	
V25	Picture Tube	19AP4	19AP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: HALLICRAFTER PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	45A159	PRSA450/40-40		EDJ10118		TVL-64 †	Filter-Red
B	40	450							Filter-Red
C2	80	450	45B158	PRSA450/40-40		EZ10074		TVL-9 †	Filter
C3A	10	450	45B157	PRS450/10-10		EDL8D45		TVL-39 †	Filter-Red
B	10	450		Use Two		Use Two			Filter-Blue
C	10	450							Filter-Green
D	10	450							Filter-Yellow
C4A	50	250	45B165 *	PRS450/40		BR5025		TVA-82	Filter-Red
B	75	50		PRS50/100		BRH501		TVA-17	Vert. Output Cath. Byp. Yellow
C5A	8	475	45B139	PRSA450/8-8		BRD1145A		TVA-25	Decoupling
B	8	475							Decoupling
C6A	40	450	45A159	PRSA450/40-40		EDJ10118		TVL-64 †	Filter-Red
B	40	450							Filter-Red
C7	80	450	45B158	PRSA450/40-40		EZ10074		TVL-9 †	Filter
C8	2.5		47A160-4		D2-2.2				RF Coupling
C9	8-50						557-N750-8-50		Variable Trimmer
C10	3-12						557-NPO-3-12		Variable Trimmer
C11	30		47X20UK300J	SI30JNPO	D2-30				Fixed Trimmer
C12	470		47X20UK471J	GP470M	D6-471		GP2K-470		AGC Filter
C13	470		47X20UK471J	GP470M	D6-471		GP2K-470		RF Screen Bypass
C14	470		47X20UK471J	GP470M	D6-471		GP2K-470		RF Cath. Bypass
C15	470		47X20UK471J	GP470M	D6-471		GP2K-470		RF Fil. Bypass
C16	100		47B20101K5	GP100M	D6-101		GP1K-100		RF Coupling
C17	470		47X20UK471J	GP470M	D6-471		GP2K-470		RF Bypass
C18	100		47B20101K5	GP100M	D6-101		GP1K-100		Fixed Trimmer
C19	125		47X20UK121J						Fixed Trimmer
C20	100		47B20101K5	GP100M	D6-101		GP1K-100		RF Coupling
C21	5000		47A168	BPD-5	D6-502		811-005	29C1	Mixer Screen Bypass
C22	470		47X20UK471J	GP470M	D6-471		GP2K-470		Mixer Fil. Bypass
C23	1		47A160-2		D2-1				Osc. Coupling
C24	3-12						TS2A-N500-3-12		Variable Trimmer
C25	5		47X20UJ050M	SI5DNPO	D2-4.7		NPOK-5		Osc. Grid Cap.
C26	470		47X20UK471J	GP470M	D6-471		GP2K-120		Osc. Filament Bypass
C27	5000		47A168	BPD-5	D6-502		811-005	29C1	Mixer Plate Decoup.
C28	5000		47A168	BPD-5	D6-502		811-005	29C1	RF Bypass
C29	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	AGC Filter
C30	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	1st V. IF Decoup.
C31	270		47B20271K5	GP270M	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C32	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	AGC Filter
C33	47			CN47JNPO	D2-47				Fixed Trimmer
C34	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	2nd V IF Decoup.
C35	47			CN47JNPO	D2-47				Fixed Trimmer
C36	270		47B20271K5	GP270M	D6-271	5W5T25	GP2K-270	1FM-325	IF Coupling
C37	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	RF Bypass
C38	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	3rd V IF Cath. Byp.
C39	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	3rd V. IF Plate Dec.
C40	5		47X20UJ050M	GP5K	D2-4.7	5W5V5	GP1K-5	MS-55	V. Diode Filter
C41	.25	200	46AT254J	P488-25		GT2P25		TC-2	AGC Filter
C42	.05	200	46AU503J	P288-05		PTE485		TM-15	Video Coupling
C43	56	500	47X20A560K	1468-00005	D6-560	5W5Q5	GP1K-56	1FM-45	2nd V. Amp. Cath. Byp.
C44	.02	600	46AY203J	P688-02		PTE6S2		TM-12	Video Coupling
C45	.25	200	46AT254J	P488-25		GT2P25		TC-2	DC Res. Cath. Byp.
C46	.1	600	46AY104J	P688-1		PTE6P1		TM-1	Video Coupling
C47	47			CN47JNPO	D2-47				Fixed Trimmer
C48	.1	200	46AU104J	P288-1		PTE4P1		TM-1	Pic. Tube Cath. Byp.
C49	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	1st S. IF Decoup.
C50	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	1st S. IF Cath. Byp.
C51	47	500	47X20A470M	1468-00005	D6-470	5W5Q5	GP1K-47	1FM-45	Limiter Grid Filter
C52	5000		47A168	BPD-5	D6-502	1D5D5	811-005	29C1	Limiter Decoup.
C53	270	500	47X20A271M	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	RF Bypass
C54	.01	600	46AY103J	P688-01	D6-103	PTE6S1	811-01	TM-11	Audio Coupling

CAPAC

ITEM No.	RATING: CAP.	RATING: VOLT	HALLICRAFTER PART No.	AEROVOX PART No.	REPLACE CENTR PART
C55	.005	600	46AY502J	P688-005	D6-5
C56	22u	500	47X20A221M	1468-00025	D6-2
C57	.02	600	46AY203J	P688-02	
C58	.005	600	46AY502J	P688-005	D6-5
C59	.02	600	46AY203J	P688-02	
C60	.003	600	46AZ302J	P688-003	D6-3
C61	.003	600	46AZ302J	P688-003	D6-3
C62	.01	600	46AY103J	P688-01	D6-1
C63	.1	200	46AU104J	P288-1	
C64	100		47B20101K5	GP100M	D6-1
C65	1000	500	47X20A102K	1468-001	D6-1
C66	.002	600	46AZ202J	P688-002	D6-2
C67	.005	600	46AY502J	P688-005	D6-5
C68	.005	600	46AY502J	P688-005	D6-5
C69	4700	500	47X35A472M	1467-005	D6-4
C70	.1	600	46AY104J	P688-1	
C71	.25	600	46AX254J	604-25	
C72	180	500	47X20A181M	1468-0002	D6-1
C73	220	500	47X20A221M	1468-0002	D6-2
C74	.002	600	46AZ202J	P688-002	D6-2
C75	.25	200	46AT254J	P488-25	
C76	.02	600	46AY203J	P688-02	
C77	.1	600	46AY104J	P688-1	
C78	390	500	47X20A391M	1468-0004	D6-3
C79	10000	500	47X35A103K	1467-01	
C80	1000	500	47X20A102K	1468-001	D6-1
C81	1000	500	47X20A102K	1468-001	D6-1
C82	100	500	47X20A101K	1468-0001	D6-1
C83	1000		47B20A102M5	GP1000M	D6-1
C84	1000		47B20A102M5	GP1000M	D6-1
C85	.05	600	46AY503J	P688-05	
C86	.25	200	46AT254J	P488-25	
C87	1000		47B20A102M5	GP1000M	D6-1
C88	68		47B20680K5	GP68K	D6-6
C89	68		47B20680K5	GP68K	D6-6
C90	1000		47B20A102M5	GP1000M	D6-1
C91	.035	600	46AY353J	P688-033	
C92	.05	600	46AY503J	P688-05	
C93	.1	600	46AY104J	P688-1	
C94	5		47X20UJ050M	GP5K	D2-4
C95	.25	200	46AT254J	P488-25	
C96	500	20000	47A216		TV2-1
C97	500	20000	47A216		TV2-1
C98	.01	600	46BR103L6	P688-01	D6-1
C99	.01	600	46BR103L6	P688-01	D6-1

* Some models use 100MFD/150V, 150MFD/50V (Mfgr's
† Use mounting strap.

CO

ITEM No.	RATING: RESIST-ANCE	RATING: WATTS	REPLACEMENT DATA: Hallicrafters PART No.	IRC PART No.	CLAR PAR
R1A	1 Meg.	½	25A872	Q13-137	AM-6
B	Shaft		Not Req.	Not Req.	KSS-1
C	Switch		Not Req.	76-1	SW-A
R2	10KΩ	2	25B790		25B79
R3A	50KΩ	½	25A858	Q11-123	M-44
B	Shaft		Not Req.	Not Req.	Not R
R4A	5000Ω	½	25B712	Q11-114	M-19
B	Shaft		Not Req.	Not Req.	Not R
R5A	2.5 Meg.	½	25B711	Q11-239	M-84
B	Shaft		Not Req.	Not Req.	Not R
R6A	1 Meg.	½	25A857	Q11-137	M-61
B	Shaft		Not Req.	Not Req.	Not R
R7A	50KΩ	½	25A858	Q11-123	M-44
B	Shaft		Not Req.	Not Req.	Not R
R8	2500Ω	4	25B870		10-25

RE

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: HALLICRAFTER PART No.	IRC PART No.
R9	12KΩ	½	23X20X123K	
R10	2200Ω	½	23X20X222K	BTS-2200
R11	1.2 Meg.	½	23X20X125K	
R12	47KΩ	½	23X20X473K	
R13	10KΩ	2	23X40X103K	
R14	12KΩ	½	23X20X123K	
R15	1 Meg.	½	23X20X105K	
R16	150KΩ	½	23X20X154K	
R17	5100Ω 5%	½		
R18	22KΩ 20%	½	23X20X223K	
R19	12KΩ	½	23X20X123K	
R20	10KΩ	2	23X40X103K	
R21	47Ω	½	23X20X470K	
R22	10000Ω	½	23X20X102K	BTS-1000
R23	150Ω	½	23X20X151K	
R24	150Ω	½	23X20X151K	
R25	12KΩ	½	23X20X123K	
R26	47Ω	½	23X20X470K	
R27	1000Ω	½	23X20X102K	BTS-1000
R28	4700Ω	½	23X20X472K	BTS-4700
R29	150Ω	½	23X20X151K	
R30	18KΩ	1	23X30X183K	
R31	3300Ω	1	23X30X332K	BTA-3300
R32	30000Ω	10	24BG302E	AB-3000
R33	4700Ω	½	23X20X472K	BTS-4700
R34	10KΩ	½	23X20X103K	BTS-10K
R35	220KΩ	½	23X20X224K	BTS-220K
R36	22KΩ	½	23X20X223K	BTS-22K

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA HALLICRAFTER PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6AG5	6AG5	7BD	
V2	Mixer	6AK5	6AK5	7BD	
V3	Oscillator	6AB4	6AB4	5CE	
V4	1st Video IF	6AU6	6AU6	7BK	
V5	2nd Video IF	6AU6	6AU6	7BK	
V6	3rd Video IF	6AU6	6AU6	7BK	
V7	Video Det.-AGC-1st Video Amp.	12AU7	12AU7	9A	
V8	2nd Video Amp.-1st Sync. Sep.	12AU7	12AU7	9A	
V9	Sound IF Amp.	6AU6	6AU6	7BK	
V10	Limiter	6AU6	6AU6	7BK	
V11	Disc.-AF Amp.	6T8	9E		
V12	Phase Inv.	6AV6	6AV6	7BT	
V13	Audio Output	6AQ5	6AQ5	7BZ	
V14	Audio Output	6AQ5	6AQ5	7BZ	
V15	Sync. Amp.-2nd Sync. Sep.	12AU7	12AU7	9A	
V16	Vert. Osc.-1st Vert. Amp.	6SN7GT	6SN7GT	8BD	
V17	2nd Vert. Amp.	6SN7GT	6SN7GT	8BD	
V18	Hor. Osc.	6SN7GT	6SN7GT	8BD	
V19	Hor. Output	6BG6G	6BG6G	5BT	
V20	Hor. Output	6BG6G	6BG6G	5BT	
V21	Damper	6W4GT	5W4GT	4CG	
V22	RF Rect.	1X2	1X2	7CB	
V23	LV Rect.	5V4G	5V4G	5L	
V24	LV Rect.	5V4G	5V4G	5L	
V25	Picture Tube	19AP4	19AP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA HALLICRAFTER PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	450	45A159	PRS450/40-40		EDJI0118		TVL-64 †	Filter-Red
B	40	450							Filter-Red
C2	80	450	45B158	PRSA450/40-40		EZI0074		TVL-9 †	Filter
C3A	10	450	45B157	PR450/10-10		EDL8D45		TVL-39 †	Filter-Red
B	10	450		Use Two					Filter-Blue
C	10	450							Filter-Green
D	10	450							Filter-Yellow
C4A	50	350	45B165 *	PR450/40		BR5025		TVA-82	Filter-Red
B	75	50		PR850/100		BRR50i		TVA-17	Vert. Output Cath. Byp. Yellow
C5A	8	475	45B139	PRSA450/8-8		BRDI145A		TVA-25	Decoupling
B	8	475							Decoupling
C6A	40	450	45A159	PRSA450/40-40		EDJI0118		TVL-64 †	Filter-Red
B	40	450							Filter-Red
C7	80	450	45B158	PRSA450/40-40		EZI0074		TVL-9 †	Filter
C8	2.5		47A160-4		D2-2.2				RF Coupling
C9	5-50							557-N750-8-50	Variable Trimmer
C10	3-12							557-NPO-3-12	Variable Trimmer
C11	30		47X20UK300J	SI30JNPO	D2-30				Fixed Trimmer
C12	470		47X20UK471J	GP470M	D6-471		GP2K-470		AGC Filter
C13	470		47X20UK471J	GP470M	D6-471		GP2K-470		RF Screen Bypass
C14	470		47X20UK471J	GP470M	D6-471		GP2K-470		RF Cath. Bypass
C15	470		47X20UK471J	GP470M	D6-471		GP2K-470		RF Fil. Bypass
C16	100		47B20101K5	GP100M	D6-101		GP1K-100		RF Coupling
C17	470		47X20UK471J	GP470M	D6-471		GP2K-470		RF Bypass
C18	100		47B20101K5	GP100M	D6-101		GP1K-100		Fixed Trimmer
C19	125		47X20UK121J						Fixed Trimmer
C20	100		47B20101K5	GP100M	D6-101		GP1K-100		RF Coupling
C21	5000		47A168	BPD-5	D6-502		81I-005	29C1	Mixer Screen Bypass
C22	470		47X20UK471J	GP470M	D6-471		GP2K-470		Mixer Fil. Bypass
C23	1		47A160-2		D2-1				Osc. Coupling
C24	3-12							TS2A-N500-3-12	Variable Trimmer
C25	5		47X20UJ050M	SI5DNPO	D2-4.7			NPOK-5	Osc. Grid Cap.
C26	470		47X20UK471J	GP470M	D6-471		GP2K-120		Osc. Filament Bypass
C27	5000		47A168	BPD-5	D6-502		81I-005	29C1	Mixer Plate Decoup.
C28	5000		47A168	BPD-5	D6-502		81I-005	29C1	RF Bypass
C29	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	AGC Filter
C30	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	1st V. IF Decoup.
C31	270		47B20271K5	GP270M	D6-271	5WS725	GP2K-270	1FM-325	1F Coupling
C32	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	AGC Filter
C33	47			CN47JNPO	D2-47				Fixed Trimmer
C34	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	2nd V. IF Decoup.
C35	47			CN47JNPO	D2-47				Fixed Trimmer
C36	270		47B20271K5	GP270M	D6-271	5WS725	GP2K-270	1FM-325	IF Coupling
C37	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	RF Bypass
C38	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	3rd V. IF Cath. Byp.
C39	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	3rd V. IF Plate Dec.
C40	5		47X20UJ050M	GP5K	D2-4.7	5WS7i5	GP1K-5	MS-55	V. Diode Filter
C41	.25	200	46A T254J			GT3P25		TC-2	AGC Filter
C42	.05	200	46AU503J			PT5E45		TM-15	Video Coupling
C43	56	500	47X20A560K		D6-560	5WS4	GP1K-56	1FM-45	2nd V. Amp. Cath. Byp.
C44	.02	600	46AY203J			PT5E82		TM-12	Video Coupling
C45	.25	200	46AT254J			P488-25		TC-2	DC Res. Cath. Byp.
C46	.1	600	46AU104J			PT5EP1		TM-1	Video Coupling
C47	47			CN47JNPO	D2-47		PT5AP1		Fixed Trimmer
C48	.1	200	46AU104J			P288-1		TM-1	Pic. Tube Cath. Byp.
C49	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	1st S. IF Decoup.
C50	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	1st S. IF Cath. Byp.
C51	47	500	47X20A470M	1468-00005	D6-470	5WSQ5	GP1K-47	1FM-45	Limiter Grid Filter
C52	5000		47A168	BPD-5	D6-502	1D5D5	81I-005	29C1	Limiter Decoup.
C53	270	500	47X20A271M	1468-00025	D6-271	5WS725	GP2K-270	1FM-325	RF Bypass
C54	.01	600	46AT103J		D6-103	PT5E81	81I-01	TM-11	Audio Coupling

CAPACITORS (CONT.)

ITEM No.	RATING CAP.	RATING VOLT	REPLACEMENT DATA HALLICRAFTER PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C55	.005	600	46AY502J	P688-005	D6-502	PTE6D5	81I-005	TM-25	Audio Coupling
C56	22u	500	47X20A221M	1468-00025	D6-221	5WS725	GP2K-220	1FM-325	AF Amp. Plate Byp.
C57	.02	600	46AY203J	P688-02		PTE6S2		TM-12	Audio Coupling
C58	.005	600	46AY502J	P688-005	D6-502	PTE6D5	81I-005	TM-25	Audio Coupling
C59	.02	600	46AY203J	P688-02		PTE6S2		TM-12	Audio Coupling
C60	.003	600	46AZ302J	P688-003	D6-302	PTE6D3	GP2M-003	TM-23	Output Plate Bypass
C61	.003	600	46AZ302J	P688-003	D6-302	PTE6D3	GP2M-003	TM-23	Output Plate Bypass
C62	.01	600	46AY103J	P688-01	D6-103	PTE6SI	81I-01	TM-11	Sync. Coupling
C63	.1	200	46AU104J	P288-1		PTE4P1		TM-1	Sync. Amp. Cath. Byp.
C64	100		47B20101K5	GP100M	D6-101	5WS7i	GP1K-100	1FM-31	Sync. Coupling
C65	1000	500	47X20A102K	1468-001	D6-102	1WSD1	GP2L-001	1FM-31	2nd Sync. Sep. Cath. Byp.
C66	.003	600	46AZ303J	P688-02	D6-203	PTE6D2	GP2M-003	TM-22	Integrator Net.
C67	.005	600	46AY502J	P688-005	D6-502	PTE6D5	81I-005	TM-25	Integrator Net.
C68	.005	600	46AY502J	P688-005	D6-502	PTE6D5	81I-005	TM-25	Integrator Net.
C69	4700	500	47X35A472M	1467-005	D6-472	1DSD5	GP3M-0047	1FM-25	Vert. Osc. Grid Cap.
C70	.1	600	46AY104J	P688-1		PTE6P1		TM-1	Vert. Discharge
C71	.25	600	46AX254J	584-25		GT6P25		TC-3	Vert. Sweep Coup.
C72	.15	500	47X20A181M	1468-0002	D6-181	5WS72	GP2K-18u	1FM-32	Hor. Sweep Coupling
C73	220	500	47X20A221M	1468-0002	D6-221	5WS725	GP2K-220	1FM-32	Voltage Divider
C74	.002	600	46AZ202J	P688-002	D6-202	PTE6D2	GP2M-002	TM-22	Hor. Sweep Coupling
C75	.25	200	46AT254J	P488-25		GT2P25		TC-2	AFC Filter
C76	.02	600	46AY203J	P688-02		PTE6S2		TM-12	AFC Filter
C77	.1	600	46AY104J	P688-1		PTE6P1		TM-1	Hor. AFC Plate Byp.
C78	390	500	47X20A391M	1468-0004	D6-391	5WS74	GP2K-390	1FM-34	Hor. Osc. Grid Cap.
C79	10000	500	47X35A103K	1467-01		1DSI		1FM-11	Fixed Trimmer
C80	1000	500	47X20A102K	1468-001	D6-102	1WSD1	GP2L-001	1FM-21	Hor. Discharge
C81	1000	500	47X20A102K	1468-001	D6-102	1WSD1	GP2L-001	1FM-21	Hor. Sweep Coup.
C82	100	500	47X20AI01K	1468-0001	D6-101	5WS7I	GP1K-100	1FM-31	Voltage Divider
C83	1000		47B20A102M5	GP1000M	D6-102	1WSD1	GP2L-001	1FM-21	Hor. Output Screen Byp.
C84	1000		47B20A102M5	GP1000M	D6-102	1WSD1	GP2L-001	1FM-21	Hor. Output Screen Byp.
C85	.05	600	46AY503J	P688-05		PTE6S5		TM-15	Hor. Output Screen Byp.
C86	.25	200	46AT254J	P488-25		GT2P25		TC-2	Hor. Output Cath. Byp.
C87	1000		47B20A102M5	GP1000M	D6-102	1WS01	GP2L-001	1FM-31	Hor. Output Cath. Byp.
C88	68		47B20680K5	GP68K	D6-680	5WSQ7	GP1K-68	MS-47	Hor. Feedback
C89	68		47B20680K5	GP68K	D6-680	5WSQ7	GP1K-68	MS-47	Hor. Feedback
C90	1000		47B20A102M5	GP1000M	D6-102	1WSD1	GP2L-001	1FM-21	RF Bypass
C91	.035	600	46AY353J	P688-033					Damper Filter
C92	.05	600	46AY503J	P688-05		PTE6S5		TM-15	Damper Filter
C93	.1	600	46AY104J	P688-1		PTE6P1		TM-1	Fixed Trimmer
C94	5		47X20UJ050M	GP5K	D2-4.7	5WSV5	GP1K-5	MS-55	Hor. Feedback
C95	.25	200	46AT254J	P488-25		GT2P25		TC-2	Hor. Sweep Coupling
C96	500	20000	47A216		TV2-502				HV Filter
C97	500	20000	47A216		TV2-502				HV Filter
C98	.01	600	46BR103L6	P688-01	D6-102	PTE6SI	81I-01	TM-11	Line Filter
C99	.01	600	46BR103L6	P688-01	D6-102	PTE6SI	81I-01	TM-11	Line Filter

* Some models use 100MFD/159V, 150MFD/50V (Mfgr's Part No. 45B156) in this application.
† Use mounting strap.

CONTROLS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA Hallicrafters PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1 Meg.	½	25A872	Q12-137	AM-63-2	BSK-70-S	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R1A per instructions
R2	10KΩ	2	25B790		25B790		Contrast control and FM-TV switch
R3A	50KΩ	½	25A858	Q11-123	M-44-S	AN-31	Brightness control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R3A per instructions
R4A	5000Ω	½	25B712	Q11-114	M-19-S	AN-10	Vert. linearity control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R4A per instructions
R5A	2.5 Meg.	½	25B7I1	Q11-239	M-84-S	AN-83	Height control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R5A per instructions
R6A	1 Meg.	½	25A857	Q11-137	M-61-S	AN-69	Vert. hold control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R6A per instructions
R7A	50KΩ	½	25A858	Q11-123	M-44-S	AN-31	Horiz. hold control
B	Shaft		Not Req.	Not Req.	Not Req.	AK-1	Attach to R7A per instructions
R8	2500Ω	4	25B870		10-2500	SVP-988	Focus control-Wire Wound

RESISTORS

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA HALLICRAFTER PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED
R9	12KΩ	½	28X30X123K		Ant. Loading
R10	2200Ω	½	23X20X222K	BTS-2200	RF Grid
R11	1.3 Meg.	½	23X20X135K		AGC Network
R12	47KΩ	½	23X20X473K		RF Screen
R13	10KΩ	2	23X40X103K		RF Plate
R14	12KΩ	½	23X20X123K		Mixer Coil Shunt
R15	1 Meg.	½	23X20X105K		Mixer Grid
R16	150KΩ	½	23X20X154K		Mixer Screen
R17	5100Ω 5%	½			Mixer Plate Transformer Shunt
R18	22KΩ 20%	½	23X20X223K		Mixer Plate Decoupling
R19	12KΩ	2	23X30X123K		Osc. Grid
R20	10KΩ	2	23X40X103K		Osc. Plate
R21	47Ω	½	23X20X470K		1st Video IF Cathode
R22	1000Ω	½	23X20X102K	BTS-1000	1st Video IF Decoupling
R23	150Ω	½	23X20X151K		AGC Network
R24	150Ω	½	23X20X151K		AGC Network
R25	12KΩ	½	23X20X123K		2nd Video IF Grid
R26	47Ω	½	23X20X470K		2nd Video IF Cathode
R27	1000Ω	½	23X20X102K	BTS-1000	2nd Video IF Decoupling
R28	4700Ω	½	23X20X472K	BTS-4700	3rd Video IF Grid
R29	150Ω	½	23X20X151K		3rd Video IF Cathode
R30	18KΩ	1	23X30X183K		3rd Video IF Plate Decoupling
R31	3300Ω	½	23X30X332K	BTA-3300	Filter
R32	3000Ω	10	24BG302E	AB-3000	Filter-Wire Wound
R33	4700Ω	½	23X20X472K	BTS-4700	4th Video IF Transformer Shunt
R34	10KΩ	½	23X20X103K	BTS-10K	Video Det. Load
R35	220KΩ	½	23X20X224K	BTS-220K	AGC Network
R36	22KΩ	½	23X20X223K	BTS-22K	Peaking Coil Shunt

RESISTORS (CONT.)

ITEM No.	RATING RESISTANCE	RATING WATTS	REPLACEMENT DATA HALLICRAFTER PART No.	IRC PART No.	IDENTIFICATION CODES
R37	2200Ω	½	23X30X222K	BTA-2200	1st Video Amp. Plate
R38	1 Meg. 20%	½	23X20X105M	BTS-1 Meg.	2nd Video Amp. Grid
R39	4700Ω	2	23X40X472K	BT-2-4700	2nd Video Amp. Plate
R40	330KΩ	½	23X20X334K	BTS-330K	1st Sync. Sep. Cathode
R41	47KΩ	½	23X20X473K	BTS-47K	1st Sync. Sep. Grid
R42	1 Meg. 20%	½	23X20X105M	BTS-1 Meg.	1st Sync. Sep. Grid
R43	27KΩ	½	23X20X273K	BTS-27K	1st Sync. Sep. Plate
R44	470KΩ 20%	½	23X20X474M	BTS-470K	Picture Tube Grid
R45	82Ω	2	23X20X820K		Sound IF Cathode
R46	2200Ω	½	23X20X222K	BTS-2200	Sound IF Decoupling
R47	47KΩ	½	23X20X473K	BTS-47K	Limiter Grid
R48	47KΩ	½	23X20X473K	BTS-47K	Limiter Decoupling
R49	100KΩ	½	23X20X104K	BTS-100K	Disc. DiodeLoad
R50	100KΩ	½	23X20X104K	BTS-100K	Disc. Diode Load
R51	10 Meg. 20%	½	23X20X106M	BTS-10 Meg.	AF Amp. Grid
R52	270KΩ 20%	½	23X20X274M	BTS-270K	AF Amp. Plate
R53	10 Meg. 20%	½	23X20X106M	BTS-10 Meg.	Phase Inv. Grid
R54	270KΩ 20%	½	23X20X274M	BTS-270K	Phase Inv. Plate
R55	8200Ω	½	23X20X822K	BTS-8200	Output Grid
R56	470KΩ 20%	½	23X20X474M	BTS-470K	Output Grid
R57	470KΩ 20%	½	23X20X474M	BTS-470K	Output Grid
R58	330Ω	2	24X40X331K	BW-2-330	Output Cathode
R59	180KΩ 20%	½	23X20X184K	BTS-180K	Voltage Divider
R60	15KΩ 20%	½	23X20X153K	BTS-15K	Voltage Divider
R61	1 Meg. 20%	½	23X20X105M	BTS-1 Meg.	Sync. Amp. Grid
R62	10KΩ	½	23X20X103K	BTS-10K	Sync. Amp. Cathode
R63	47KΩ	½	23X20X473K	BTS-47K	Sync. Amp. Plate
R64	2200Ω	½	23X20X222K	BTS-2200	2nd Sync. Sep. Cathode
R65	2.2 Meg. 20%	½	23X20X225M	BTS-2.2 Meg.	2nd Sync. Sep. Grid
R66	22KΩ	½	23X20X223K	BTS-22K	Integrator Network
R67	8200Ω	½	23X20X822K	BTS-8200	Integrator Network
R68	82000Ω	½	23X20X823K	BTS-8300	Integrator Network
R69	1 Meg.	1	23X20X105K	BTA-1 Meg.	Vert. Osc. Grid
R70	1 Meg. 20%	1	23X30BF105K		Vert. Osc. Plate
R71	330KΩ	½	23X20X333K	BTS-330K	Vert. Peaking
R72	2.2 Meg. 20%	½	23X20X225M	BTS-2.2 Meg.	Vert. Amp. Grid
R73	2200Ω	½	23X30X222K	BTA-2200	Decoupling
R74	820KΩ 20%	½	23X20X824M	BTS-820K	Horiz. AFC Grid
R75	150KΩ 20%	½	23X20X154M	BTS-150K	Horiz. AFC Cathode
R76	150KΩ	½	23X30BF154K		Horiz. AFC Cathode
R77	8200Ω	½	23X20X822K	BTS-8200	Horiz. AFC Filter Network
R78	2.7 Meg.	1	23X30BF275K		Voltage Divider
R79	82KΩ	½	23X20X823K	BTS-82K	Voltage Divider
R80	130KΩ	½	23X20X134K	BTS-130K	Voltage Divider
R81	120KΩ 5%	1	23X30BF124J		Horiz. Osc. Grid
R82	8200Ω	½	23X20X822K	BTS-8200	Horiz. Osc. Transformer Shunt
R83	22KΩ	½	23X20X223K	BTS-22K	Horiz. Osc. Transformer Shunt
R84	120KΩ 5%	1	23X30BF124J		Horiz. Osc. Plate
R85	10KΩ	1	23X30X103K	BTA-10K	Filter
R86	150KΩ 20%	½	23X20X154M	BTS-150K	Horiz. AFC Filter
R87	100Ω	½	23X20X101K		Parasitic Supp.
R88	47Ω	½	23X20X470K		Parasitic Supp.
R89	39Ω	1	23X30X390K		Parasitic Supp. -See Note
R90	47Ω	½	23X20X470K		Parasitic Supp.
R91	100Ω	1	23X30X101K		Parasitic Supp.
R92	39Ω	1	23X30X390K		Parasitic Supp. -See Note
R93	470KΩ 20%	½	23X20X474M	BTS-470K	Horiz. Output Grid
R94	82Ω	2	23X20X820K	BW-2-82	Horiz. Output Cathode
R95	5000Ω	10	24BG502D	AB-5000	Horiz. Output Screen-Wire Wound
R96	1 Meg. 20%	1	23X30X105M		HV Filter
R97	560KΩ	½	23X20X564K	BTS-560K	Feedback
R98	10KΩ	20	24BH103D	DG-10000	Bleeder-Wire Wound
R99	1000Ω	20	24BH102E	DG-1000	Filter-Wire Wound
R100	82Ω	½	23X20X820K		RF Cathode

Note. Some models use 47Ω resistor in this application.

SPEAKER

ITEM No.	RATINGS FIELD. RES.	RATINGS V. C. IMP.	REPLACEMENT DATA HALLICRAFTER PART No.	JENSEN PART No.	GUAM PART No.	NOTES
SP1	PM,	3.3Ω	85C100		68A3	
	CONE DIA.	V. C. DIA.				
SP2	6 1/8" x 9"	1"				

TRANSFORMER (POWER)

ITEM No.	RATING PRI.	SEC. 1	SEC. 2	SEC. 3	REPLACEMENT DATA HALLICRAFTERS PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	117VAC ⓐ 1.1A	620VCT ⓐ .127ADC	5VAC ⓐ 2A	6.3VAC ⓐ 7A	52C185 ③	P-5059 ① ②	P-3165 ① ②	
				SEC. 4 6.3VAC Winding not used				
T2	117VAC ⓐ 1.3A	660VCT ⓐ .180ADC	5VAC ⓐ 2A	6.3VAC ⓐ 1.2A	52C185 ④	P-5059 ① P-6134 ⑤	P-3165 ①	
				SEC. 4 6.3VAC ⓐ 2A				

① Drill new mounting holes.
② Add series resistor to reduce plate voltage.
③ Used on main chassis.
④ Used in HV chassis.
⑤ Use for SEC. #3

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	RATING DC RESISTANCE SEC.	REPLACEMENT DATA HALLICRAFTER PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	NOTES
T3	200Ω	1200Ω	55B115	A-8111	A-3000	TBO-1	Vert. Block Osc. Trans.
T4	420Ω Tap ④ 57Ω	5.9Ω Tap ④ .5Ω, 4.5Ω SEC. 2 0Ω	55C143		HVO-6		Hor. Output Trans.
T5	1000Ω Tap ④ 12Ω		55B128	A-8113 ⑦	A-3037	TSO-5 ⑤	Vert. Output Trans.
T6A	11Ω		53C186	DY-7	MD-70		Hor. Deflection Coil
B	61Ω						Vert. Deflection Coil
T7	450Ω		51C1128				Focus Coil

⑤ Drill one new mounting hole.
⑦ Connect windings in series.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	RATING IMPEDANCE SEC.	RATING DC RES. PRI.	RATING DC RES. SEC.	REPLACEMENT DATA Hallicrafters PART No.	REPLACEMENT DATA STANCOR PART No.	REPLACEMENT DATA MERIT PART No.	REPLACEMENT DATA CHICAGO PART No.	INSTALLATION NOTES
T8	6.6KΩ CT	3.3Ω	600Ω CT	.7Ω	55B142	A-3830 ⑤	A-2904 ⑤	RO-401	⑤ Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA HALLICRAFTER PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L1	Ant. Trans.	0Ω	0Ω			L1 to L15 are part of tuner #1D885
L2	RF Grid End Inductor	0Ω				
L3	RF Grid	0Ω				
L4	RF Grid	0Ω				
L6	RF Plate End Inductor	0Ω				
L6	RF Plate	0Ω				
L7	Band Pass	0Ω				
L8	Mixer Grid End Inductor	0Ω				
L9	Mixer Grid	0Ω				
L10	Band Pass	0Ω				
L11	Band Pass	0Ω				
L12	Osc. Shunt	0Ω				
L13	Osc. End. Inductor	0Ω				
L14	Osc. Coil	0Ω				
L15	Conv. Trans.	0Ω	0Ω			
L16	1st Video IF	0Ω	.2Ω	50B451		
L17	2nd Video IF	.1Ω		50B445		With trap
L18	3rd Video IF	.1Ω		50B444		With trap
L19	4th Video IF	.2Ω	.2Ω	50A431		
L20	Peaking	6.9Ω		51A1190		Wound on 1 Megohm resistor
L21	Peaking	19Ω		51A1189		Wound on 1 Megohm resistor
L22	Peaking	9.3Ω		51A1154		Wound on 1 Megohm resistor
L23	Peaking	9.3Ω		51A1154		Wound on 1 Megohm resistor
L24	Peaking	18.2Ω		51A1155		Wound on 1 Megohm resistor
L25	4.5MC Sound Trap	1Ω		50A450		
L26	Sound IF	.2Ω	.2Ω	50B446		
L27	Disc. Trans.	.1Ω	.1Ω	50B447		
L28	Horiz. Osc. Trans.	130Ω	38Ω	51A1153		
L29	Horiz. Lin.	32Ω		51B1071		
L30	Width	.2Ω		51B1072-1		

DIAL LIGHTS

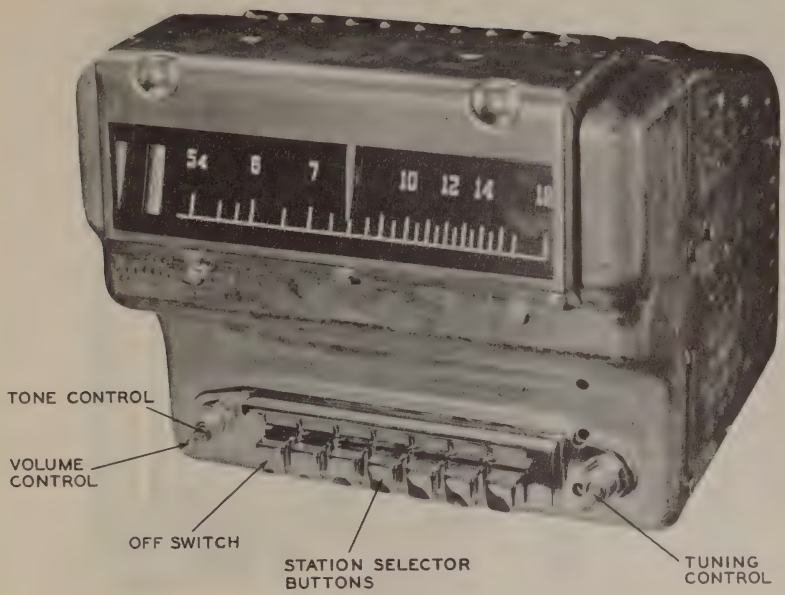
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA HALLICRAFTER PART No.		NOTES
M1	Bayonet	6-8	.15	Brown	39A004		Type #47

MISCELLANEOUS

ITEM No.	PART NAME	HALLICRAFTER PART No.	NOTES
M2	RF Tuner	1D885	
M3	Fuse	39A346	5A 250V
M4	Fuse	39A338	.25A 250V
M5	Ion Trap	21A104	
M6	Trimmer	44A361	Horiz. drive
M7	Antenna Assembly	1A892	
M8	Trimmer		RF Plate
M9	Trimmer		Mixer Grid
	Knob	15B182	Tuning Model 605
	Knob	15B193	Tuning Model 606
	Knob	15B180	Off-On Volume Model 605
	Knob	15B191	Off-On Volume Model 606
	Knob	15B180	FM-Picture Model 605
	Knob	15B191	FM-Picture Model 606
	Knob	15B215	Antenna Tuning Model 605
	Knob	15B216	Antenna Tuning Model 606
	Safety Glass	22E271	Model 605
	Safety Glass	22E272	Model 606

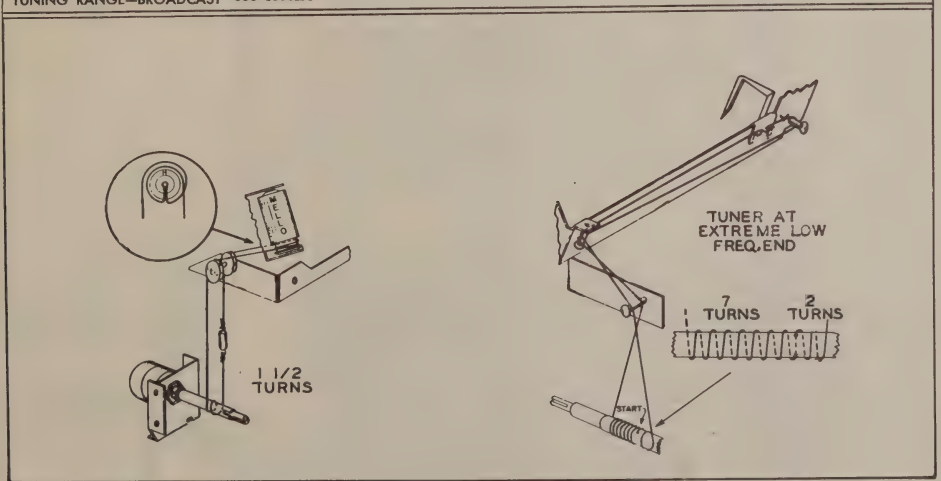
PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



MOPAR MODEL 808

TRADE NAME	Mopar, Model 808
MANUFACTURER	Motorola Inc., 4545 Augusta Blvd., Chicago, Illinois
TYPE SET	Battery Operated Custom-Built Automotive Superheterodyne Receiver
TUBES(EIGHT)	Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AT6 DET-AVC-AF, 6AT6 Phase Inverter, (2) 6V6GT Power Output, 6X4 Rectifier
POWER SUPPLY	6 Volt Storage Battery
RATING	7 Amps. at 6 Volts DC
TUNING RANGE—BROADCAST	535-1605KC



DIAL CORD DRIVE

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1950 by Howard W. Sams & Co., Inc., Indianapolis 1, Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amp.	6BA6	6BA6	7BK	
V4	DET-AVC-AF	6AT6	6AT6	7BT	
V5	Phase Inverter	6AT6	6AT6	7BT	
V6	Power Output	6V6GT	6V6GT	7AC	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	6X4	6X4	5BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOTOROLA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	350	23A473015	AFH6H6G4A		UP335-		TVL-3620	■ Filter
B	30	300				330C			▲ Filter
C	20	25							Output Cathode
C2	100		21B77562	GP100M	D6-101	5W5T1	GP1K-100	1FM-31	Fixed Trimmer
C3	.006	100	8C4529	P285-006	D6-562	ZZW1D6		68P12	RF Coupling
C4	15		21K580179	GP15M	D6-150		GP1K-15	MS-415	Fixed Trimmer
C5	.05	100	8R13514	P288-05	DF-503	PTE4S5		TM-15-2	AVC Filter
C6	.1	400	8R13166	P488-1	DF-104	PTE4P1		TM-1-4	Decoupling
C7	.05	400	8R14791	P488-05	DF-503	PTE4S5		TM-15-4	Decoupling
C8	5		21K70720	GP5K	TCZ-4.7	5W5V5	GP1K-5	MS-55	RF Coupling
C9	47		21K74661	GP47M	D6-470	5W5Q5	GP1K-47	1FM-45	Osc. Grid Cap.
C10	.05	100	8R13514	P288-05	DF-503	PTE4S5		TM-15-2	Cathode Bypass
C11	.1	100	8K472035	P288-1	DF-104	PTE4P1		TM-1-2	Isolation
C12	115		21K580275						Fixed Trimmer
C13	.006	100	8R4529	P688-006	D6-562	PTE6D6	811-005	TM-26	Audio Coupling
C14	.02	100	8R51209	P488-02	DF-203	PTE4S2		TM-12-2	Tone Compensation
C15	.01	400	8R23690	P488-01	D6-103	PTE4S1	811-01	TM-11-4	Tone Compensation
C16	47		21K74661	GP47M	D6-470	5W5Q5	GP1K-47	1FM-45	IF Coupling
C17	500	500	21R6639	1468-0005	D6-501	5W5T1	GP2K-500	1FM-31	AF Amp. Plate
C18	.03	400	8R71911	P488-03		PTE6S3		TM-13	Audio Coupling
C19	.03	400	8R71911	P488-03		PTE6S3		TM-13	Audio Coupling
C20	.003	1000	8R13165	P1088-003		PTE16D3		MB-23	Output Plate Byp.
C21	.006	1600	8K12840	P1688-006		PTE16D6		MB-26	Buffer
C22	.5	100	8C580845	P285-1		GT2P5		68P20	Hash Filter
C23	.5	100	8C580845	P285-1		GT2P5		68P20	Hash Filter
C24	.5	100	8C580845	P285-1		GT2P5		68P20	Hash Filter

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ		18A485319	Concentrikit B11-133 *			Tone control-front
B	500KΩ			B18-133X *			Volume control-tapped at 50KΩ-rear, Note 1
C	Shaft End			E-187 *			Attach per instr. in "Concentrikit"

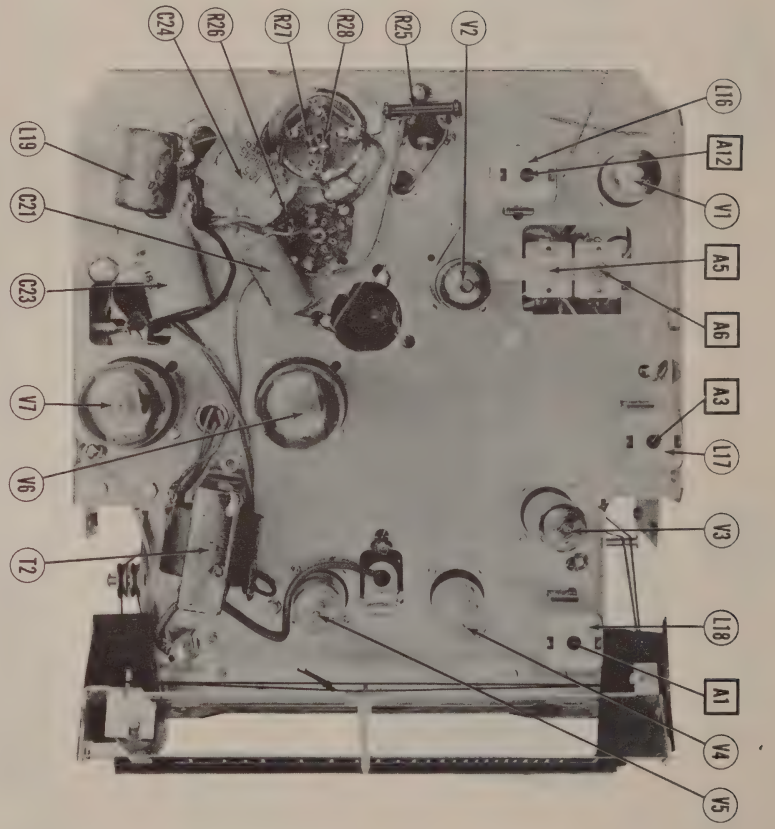
* Additional parts to be used with "Concentrikit".

Note 1. Wrap scotch tape around outer shaft for dial cord surface.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOTOROLA PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R2	470KΩ	½	6R6032	BTS-470K	AVC Network
R3	220Ω	½	6R6270	BTS-220	RF Amp. Cathode
R4	12KΩ	1	6R5656	BTA-12K	RF Amp. Plate
R5	150KΩ	½	6R6182	BTS-150K	RF Coupling
R6	100KΩ	½	6R6075	BTS-100K	Conv. Grid
R7	47KΩ	½	6R6056	BTS-47K	Osc. Grid
R8	15KΩ	1	6R490344	BTA-15K	Screen Decoupling-Wire Wound
R9	330Ω	½	6R6010	BTS-330	Decoupling

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MOTOROLA PART No.	IRC PART No.	
R10	68KΩ	½	6R6001	BTS-68K	Voltage Divider
R11	330Ω	½	6R6023	BTS-330	IF Amp. Cathode
R12	47KΩ	½	6R6056	BTS-47K	Det. Diode Filter
R13	1 Meg.	½	6R6004	BTS-1 Meg.	Det. Diode Load
R14	1 Meg.	½	6R6004	BTS-1 Meg.	AVC Network
R15	10 Meg.	½	6R2109	BTS-10 Meg.	AF Amp. Grid
R16	10KΩ	½	6R6054	BTS-10K	Tone Compensation
R17	1500Ω	½	6R6151	BTS-1500	Tone Compensation
R18	220KΩ	½	6R6015	BTS-220K	AF Amp. Plate
R19	220KΩ	½	6R6015	BTS-220K	Phase Inv. Plate
R20	10KΩ	½	6R6054	BTS-10K	Phase Inv. Grid
R21	2200Ω	½	6R6089	BTS-2200	Phase Inv. Cathode
R22	220KΩ	½	6R6015	BTS-220K	Output Grid
R23	220KΩ	½	6R6015	BTS-220K	Output Grid
R24	270Ω	1	6R6336	BTA-270	Output Cathode
R25	2200Ω	1	6R6006	BTA-2200	Filter-Wire Wound
R26	10KΩ	½	6R6054	BTS-10K	Buffer
R27	56Ω	½	6R5614	BW-½-56	Hash Suppression
R28	56Ω	½	6R5614	BW-½-56	Hash Suppression

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.
T1	6VDC ② 4A	500VCT .062ADC			25B472533	P-4062 ①	P-4071 ①	VT-3 ①

① Drill new mounting holes.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOTOROLA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	9000Ω CT	4Ω	360Ω CT	.4Ω	25B472558	A-3856	A-2938	RO-110 ②	② Drill one new mounting hole.

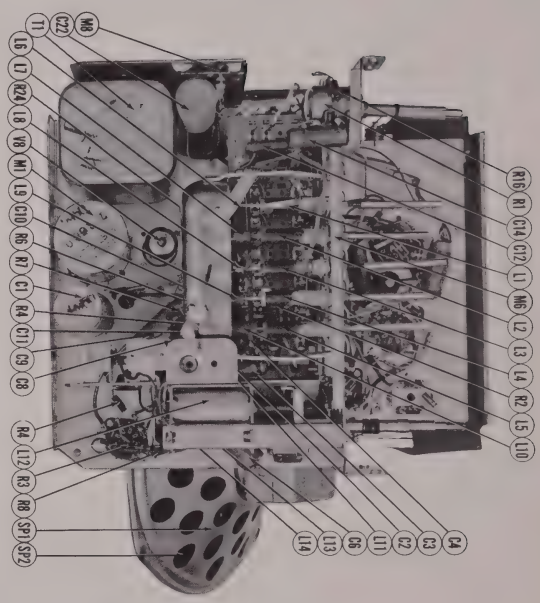
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MOTOROLA PART No.	VIKING PART No.	QUAM PART No.	
	FIELD	V. C. IMP.				
SP1	PM	4Ω	50K591921 or 50K591916 or 50K591917	7J9	7A21	
	CONE DIA.	V. C. DIA.				
SP2	6 3/4"	9/16"				

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	MOTOROLA PART No.	MEISSNER PART No.	
L1	Ant. Coil	18Ω		24B580871 *		Pushbutton #1, brown dot
L2	Ant. Coil	15Ω		24K580872 *		Pushbutton #2, red dot
L3	Ant. Coil	13Ω		24K580873 *		Pushbutton #3, orange dot
L4	Ant. Coil	13Ω		24K580874 *		Pushbutton #4, yellow dot
L5	Ant. Coil	11Ω		24K580875 *		Pushbutton #5, green dot
L6	Osc. Coil	3.3Ω		1X580861 *		Pushbutton #1, brown dot
L7	Osc. Coil	2.8Ω		1X580862 *		Pushbutton #2, red dot
L8	Osc. Coil	1.6Ω		1X580863 *		Pushbutton #3, orange dot
L9	Osc. Coil	1.6Ω		1X580864 *		Pushbutton #4, yellow dot
L10	Osc. Coil	1.3Ω		1X580865 *		Pushbutton #5, green dot

CHASSIS—BOTTOM VIEW



ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (Grid) of 6BE6 (V2). Low side to chassis.	455KC (400 ∿ Mod.)	High freq. end (cores out)	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.

RF ALIGNMENT (MANUAL)

Construct a dummy antenna as shown in figure 1.

The oscillator padder coil adjustment in step 4 has been correctly made at the factory, and should not require adjustment in the field unless components have been changed in the oscillator circuit.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
2.	See Fig 1	High side to antenna receptacle. Low side to chassis.	1605KC	High freq. end cores should be 1 1/8" out of cans.	Across voice coil	A5, A6, A7	Adjust for maximum output.
3.	"	"	1425KC	Set spacing between carriage plate and coil shield plate to 1 5/16"	"	A8, A9, A10	"
4.	"	"	Turn gen. power off	Set spacing between carriage plate and coil shield plate to 7/32"	Not used	A11	Adjust for maximum noise. If A-11 must be turned more than 1/2 turn from original position, repeat steps 2, 3 and 4 until it is necessary to turn A-11 less than 1/2 turn.
5.	"	"	455KC	Set PB #1 to 600KC (see push button alignment)	Across voice coil	A12	Adjust for MINIMUM output.

RF ALIGNMENT (PUSHBUTTON)

There are five push buttons on this receiver numbered one to five beginning with the 2nd button from the left.

The push button tracking nut adjustments as in steps 8, 9 and 10 have been made at the factory and should not require adjustment in the field unless the components have been changed in the push button circuit.

To set push buttons, remove the chrome plated caps from the button and adjust the knurled button to the desired frequency as outlined in steps 6 thru 10 below.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
6.	See Fig 1	High side to antenna receptacle. Low side to chassis.	1400KC	#5 1400KC	Across voice coil	A13	Adjust for maximum output.
7.	"	"	1605KC	#5 1605KC	"	A13	"
8.	"	"	1425KC	#5 1425KC	"	A14	Adjust tracking nut for maximum.
9.	"	"	1020KC	#4, 3 and 2 1020KC	"	A15, A16, A17	"
10.	"	"	600KC	#1 600KC	"	A18	"

POINTER ADJUSTMENT

To set pointer tune manually to 1400KC signal radiated to antenna receptacle from signal generator and set pointer to 1400KC calibration mark on dial scale.

PUSHBUTTON ADJUSTMENT

Each pushbutton must be set to a station within its frequency range. The frequency range of each pushbutton is as follows:

Pushbutton #1	535-1020KC
#2	610-1200KC
#3	700-1410KC
#4	740-1480KC
#5	840-1600KC

To set pushbutton remove chrome plated cap. Push in DIAL button and tune manually to station desired. Push in pushbutton and turn the knurled button to tune in station which was tuned in manually.

Repeat this procedure for each pushbutton. Check with short above for frequency range of each button.

SET 107

FOLDER 6

PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA MOTOROLA PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L11	Ant. Loading	2.5Ω		24B580540		
L12	Ant. Coil	13Ω		24B500155 •		
L13	RF Coil	7.8Ω		24B500155 •		
L14	Osc. Coil	3.5Ω		24K500156 •		
L15	Osc. Padder	7Ω		24B485386		Tap at 1.5Ω
L16	IF Trap	78Ω		24B580274		Tap at 25Ω
L17	1st IF	19Ω	19Ω	24B485553		
L18	2nd IF	19Ω	20Ω	24K485555		
L19	Hash Choke	.1Ω		24A472535		

• Specify color of dot when ordering.

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA MOTOROLA PART No.	REPLACEMENT DATA AEROVOX PART No.	REPLACEMENT DATA CORNELL-DUBILIER PART No.	REPLACEMENT DATA RADIART PART No.	INSTALLATION NOTES
M1	Int.	6V	115 ∿	48B3333	A-100	C-42	5300	

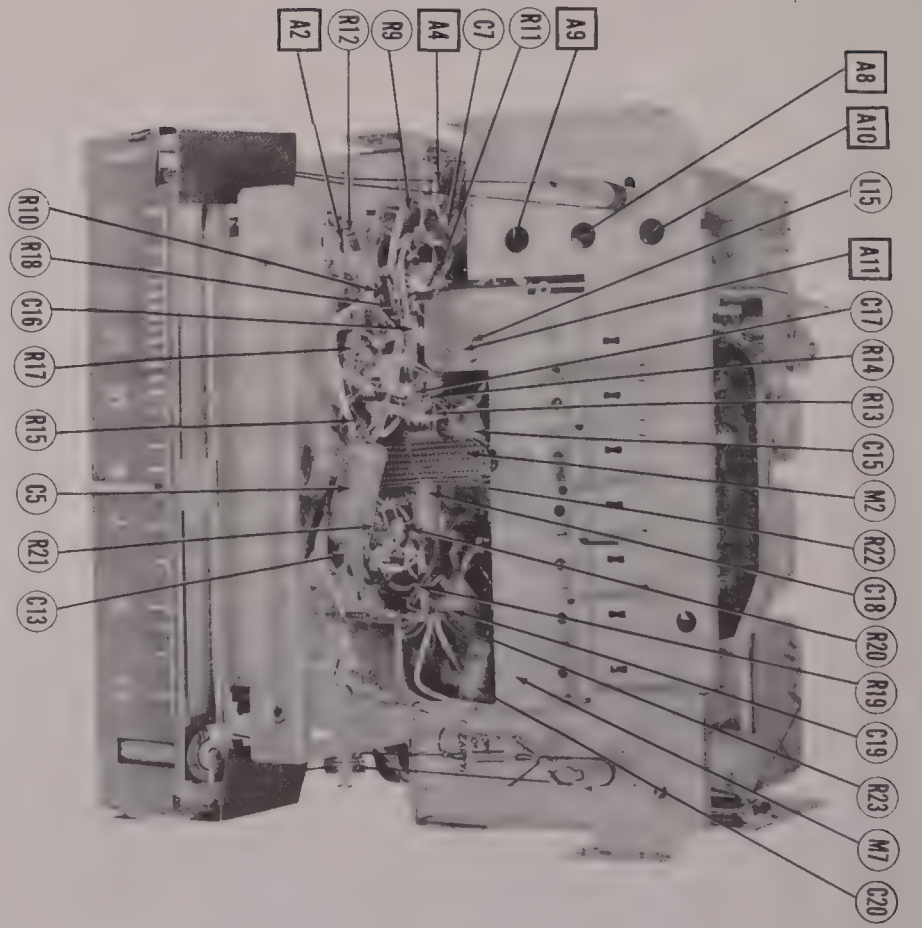
DIAL LIGHTS

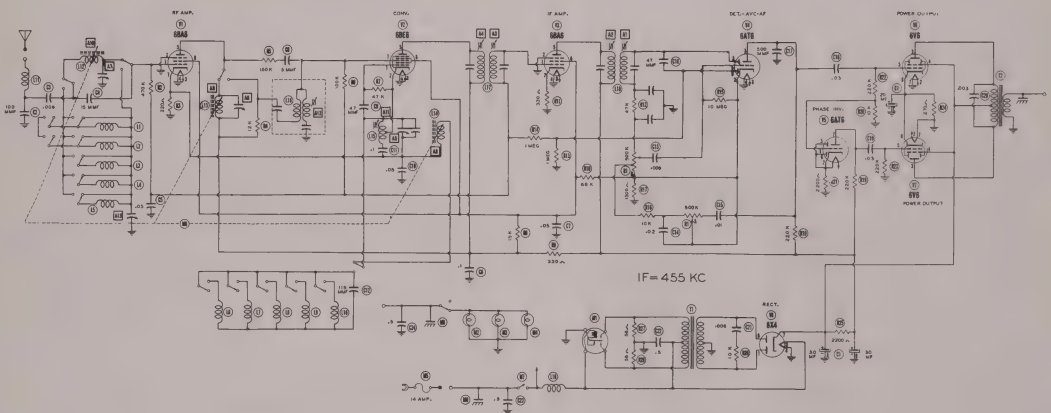
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA MOTOROLA PART No.		NOTES
M2	Bayonet	6-8	.4	White	65X12855		Type #53
M3	Bayonet	6-8	.4	White	65X12855		Type #53
M4	Bayonet	6-8	.25	Blue	65X10867		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	MOTOROLA PART No.	NOTES
M5	Fuse	65X12899	14 Amp.
M6	RF Tuner	1X489270	
M7	Switch	40C485296	On-Off-Pushbutton
M8	Spark Plate	1B580195	
A5	Trimmer	20A580174	Osc. Adj.
A6	Trimmer	20A580174	RF Adj.
A7	Trimmer	20K472613	Ant. Adj.
A13	Trimmer	20K472613	PB Ant. Adj.
	Dial Scale	34K591910	

CHASSIS—BOTTOM VIEW





V & R TAKEN WITH SWITCH IN "MANUAL" POSITION

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	-1VDC	0V.	6VDC	0V	105VDC	105VDC	3.5VDC	
V 2	6BA6	1.1VDC	3.6VDC	6VDC	2V.	60VDC	90VDC	4VDC	
V 3	6BA6	1VDC	0V.	6VDC	0V	255VDC	255VDC	3.5VDC	
V 4	6AT6	-1VDC	0.1VDC	6VDC	0V	6VDC	0V	85VDC	
V 5	6AT6	0V.	1VDC	6VDC	0V	2.5VDC	1VDC	85VDC	
V 6	6V6GT	0V	6VDC	250VDC	255VDC	0V	0V	0V.	255DC
V 7	6V6GT	0V.	6VDC	250VDC	255VDC	0V.	0V.	0V.	255DC
V 8	5Y4	350VAC	350VAC	0VAC	0V.	0V.	350VAC	350VDC	

V TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	1.3 Meg	0Ω	∞Ω	0Ω	13.5KΩ	117KΩ	220Ω	
V 2	6BA6	175Ω	280Ω	∞Ω	0Ω	12.5KΩ	117KΩ	2.1 Meg.	
V 3	6BA6	2.2Meg	0Ω	∞Ω	0Ω	1	117KΩ	220Ω	
V 4	6AT6	10 Meg	1KΩ	∞Ω	0Ω	250Ω	1 Meg	220KΩ	
V 5	6AT6	1MΩ	1 KΩ	∞Ω	0Ω	2.5KΩ	1 MΩ	220KΩ	
V 6	6V6GT	Inf.	∞Ω	320Ω	250Ω	320Ω	0Ω	0Ω	375Ω
V 7	6V6GT	Inf.	∞Ω	320Ω	250Ω	320Ω	0Ω	0Ω	375Ω
V 8	5Y4	350Ω	350Ω	∞Ω	0Ω	1kΩ	350Ω	350Ω	

Ω MEASURED FROM PIN 7 OF V8

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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L. F. BLANKENSHIP
3934 MAVE ST.
DENVER, COLORADO

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PROPERTY OF
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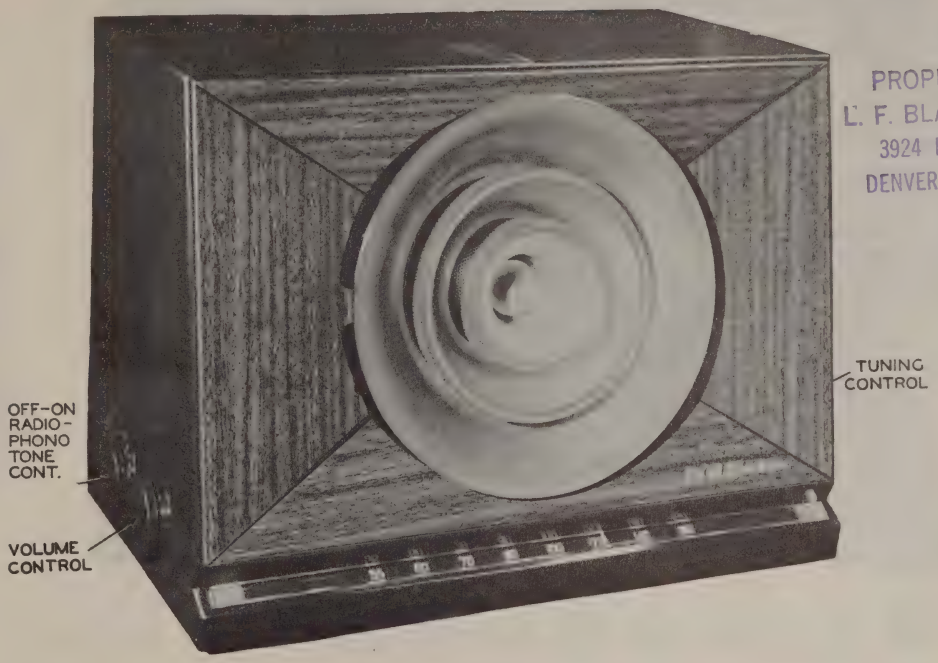
3924 MEADE ST.
DENVER, COLORADO

RCA VICTOR MODELS 9X571 (Ch. RC-1079), 9X572 (Ch. RC-1079A)



RCA VICTOR MODELS 9X571 (Ch. RC-1079), 9X572 (Ch. RC-1079A)

RCA VICTOR MODEL 9X571

TRADE NAME	RCA Victor Models 9X571 (Ch. RC-1079), 9X572 (Ch. RC-1079A)
MANUFACTURER	RCA Victor Div. of Radio Corp. of America, Camden, New Jersey
TYPE SET	AC-DC Operated Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 12SA7 Converter , 12SK7 IF Amp., 12SQ7 DET-AVC-AF, 50L6GT Power Output, 35Z5GT Rectifier
POWER SUPPLY	110-120 Volts AC-DC
RATING	.24 Amp. at 117 Volts AC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set pointer to first score mark at the left hand end of dial backplate. Use isolation transformer if available. If not connect a .1MFD capacitor in series with side of signal generator and B-. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 8 (Grid) of 12SA7 (V1). Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation.
2.	.1MFD	"	1620KC	"	"	A5	"
3.		Loop	1400KC	Tuning gang to 2nd score mark from right hand end of dial back plate.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.
4.		Loop	600KC	Tuning gang to 2nd score mark from left hand end of dial back plate.	"	A7	Adjust for maximum output. Repeat steps 2 and 3 and 4 until no further improvement can be made.

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PARTS LIST AND DESCRIPTIONS

RCA VICTOR MODEL 9X571

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RCA PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	Converter	12SA7	12SA7	8R	
V2	IF Amp.	12SK7	12SK7	8N	
V3	DET-AVC-AF	12SQ7	12SQ7	8Q	
V4	Power Output	50L6GT	50L6GT	7AC	
V5	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RCA PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	120	150	74678	AF2424D8A		UPE150D15			▲ Filter
B	120	150				BR5o5			■ Filter
C	40	25							▲ Output Cathode
C2	.05	400	73553	P488-05	DF-503	PTE4S5		4TM-15	AVC Filter
C3	56		71924	SI56	D6-560	5W5Q5	GP1K-56	1FM-45	Osc. Grid Cap.
C4	150		73501	SI150	D6-151	5W5T15	GP2K-150	19C12	Diode RF Filter
C5	.1	400	70617	P488-1	DF-104	PTE4P1		4TM-1	Phono Isolation
C6	.001	400	73186	P688-001	D6-102	PTE6D1	GP2L-001	6TM-21	Audio Coupling
C7	82		71514	SI82	TCN-82	5W5T1	GP1K-82	19C11	Tone Compensation
C8	.02	200	71928	P488-02	DF-203	PTE4S2		2TM-12	Tone Compensation
C9	.01	200	71923	P488-01	D6-103	PTE4S1	811-01	4TM-11	Tone Compensation
C10	.003	200	73961	P688-003	D6-302	PTE6D3	GP2M-003	6TM-23	Tone Compensation
C11	.02	200	71928	P488-02	DF-203	PTE4S2		2TM-12	Audio Coupling
C12	150		73501	SI150	D6-151	5W5T15	GP1K-150	19C12	AF Amp. Plate
C13	.01	400	72827	P488-01	D6-103	PTE4S1	811-01	4TM-11	Audio Coupling
C14	.01	400	72827	P488-01	D6-103	PTE4S1	811-01	4TM-11	Output Plate
C15	.1	400	70617	P488-1	DF-104	PTE4P1		72P52	Line Isolation
C16	.05	400	73553	P488-05	DF-503	PTE4S5		4TM-15	Rect. Plate Byp.

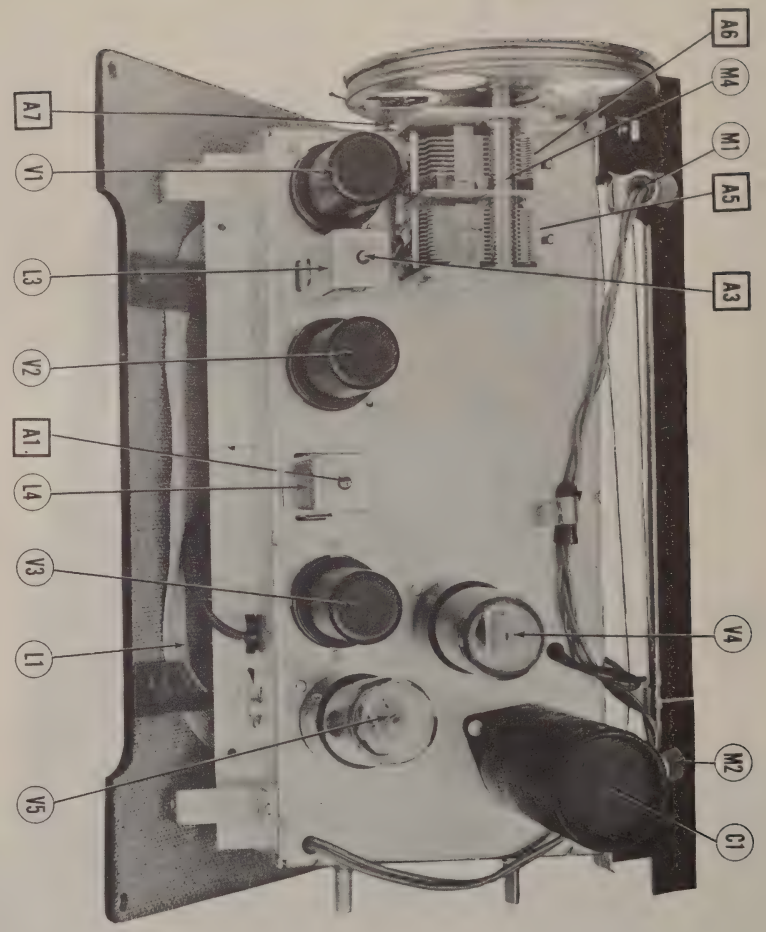
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1.5 Meg.	½	71596	Q18-139XX	AT-95		Volume control-tapped at 250KΩ and 500KΩ
B	Shaft		Not Req.	Not Req.	FS-3		Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: RCA PART No.	IRC PART No.	IDENTIFICATION CODES
R2	22KΩ	½		BTS-22K	Osc. Grid
R3	3.3 Meg.	½		BTS-3.3 Meg.	AVC Network
R4	82Ω	½		BTS-82	IF Amp. Cathode
R5	56KΩ	½		BTS-56K	Diode Filter
R6	220KΩ	½		BTS-220K	Diode Load
R7	220KΩ	½		BTS-220K	Diode Load
R8	1 Meg.	½		BTS-1 Meg.	Tone Compensation
R9	18KΩ	½		BTS-18K	Tone Compensation
R10	27KΩ	½		BTS-27K	Tone Compensation
R11	10 Meg.	½		BTS-10 Meg.	AF Amp. Grid
R12	220KΩ	½		BTS-220K	AF Amp. Plate
R13	470KΩ	½		BTS-470K	Output Grid
R14	150Ω	3		BTS-150	Output Cathode
R15	1000Ω	1		BTA-1000	Filter
R16	33Ω	½	72313		Surge Limiter
R17	220KΩ	½		BTS-220K	Isolation

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		RCA PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	3500Ω	4.6Ω	365Ω Tap ⓐ 23Ω	.7Ω	74677	A-3330 ①	A-3031 ①	RO-3 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			RCA PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-117		
SP1	PM	4.6Ω	74679	MOD P8-T	8A21	
	CONE DIA.	V. C. DIA.				
SP2	7 1/4"	1"	74758			

R F COILS

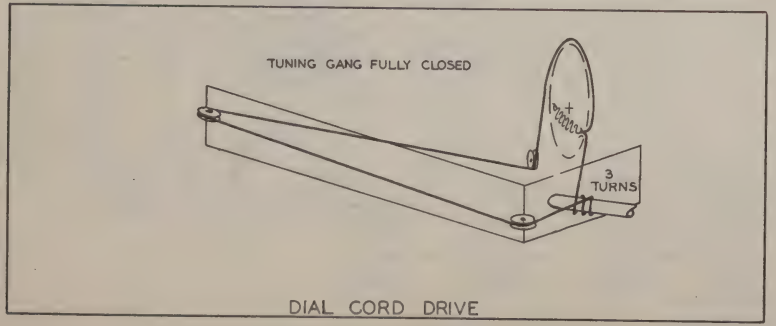
ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	RCA PART No.	MEISSNER PART No.	
L1	Loop Ant.	1Ω		74655		Includes cabinet back (tan)
L2	Osc. Coil	1Ω	5.2Ω	74448	14-1078	
L3	1st IF	11Ω	12Ω	73036	16-6758	
L4	2nd IF	15Ω	15Ω	73037	16-6758	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					RCA PART No.		
M1	Bayonet	3.2	.16	Brown	71116		Type #1490
M2	Bayonet	3.2	.16	Brown	71116		Type #1490

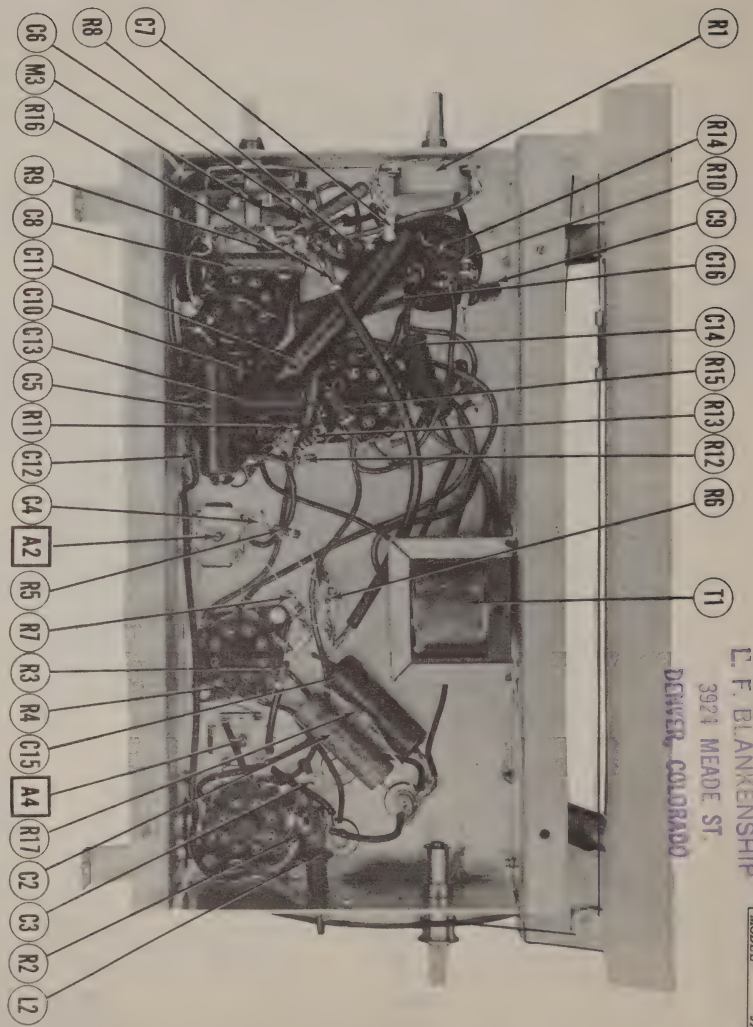
MISCELLANEOUS

ITEM No.	PART NAME	RCA PART No.	NOTES
M3	Switch	74676	Function
M4	2 Gang Var. Cap.	74653	(27-416MMF, 18-157MMF)
	Cabinet	Y2133	Model 9X571
	Cabinet	Y2134	Model 9X572
	Dial Scale	74668	
	Dial Pointer	74658	Model 9X571
	Dial Pointer	74657	Model 9X572



DIAL CORD DRIVE

CHASSIS—BOTTOM VIEW



PROPERTY OF
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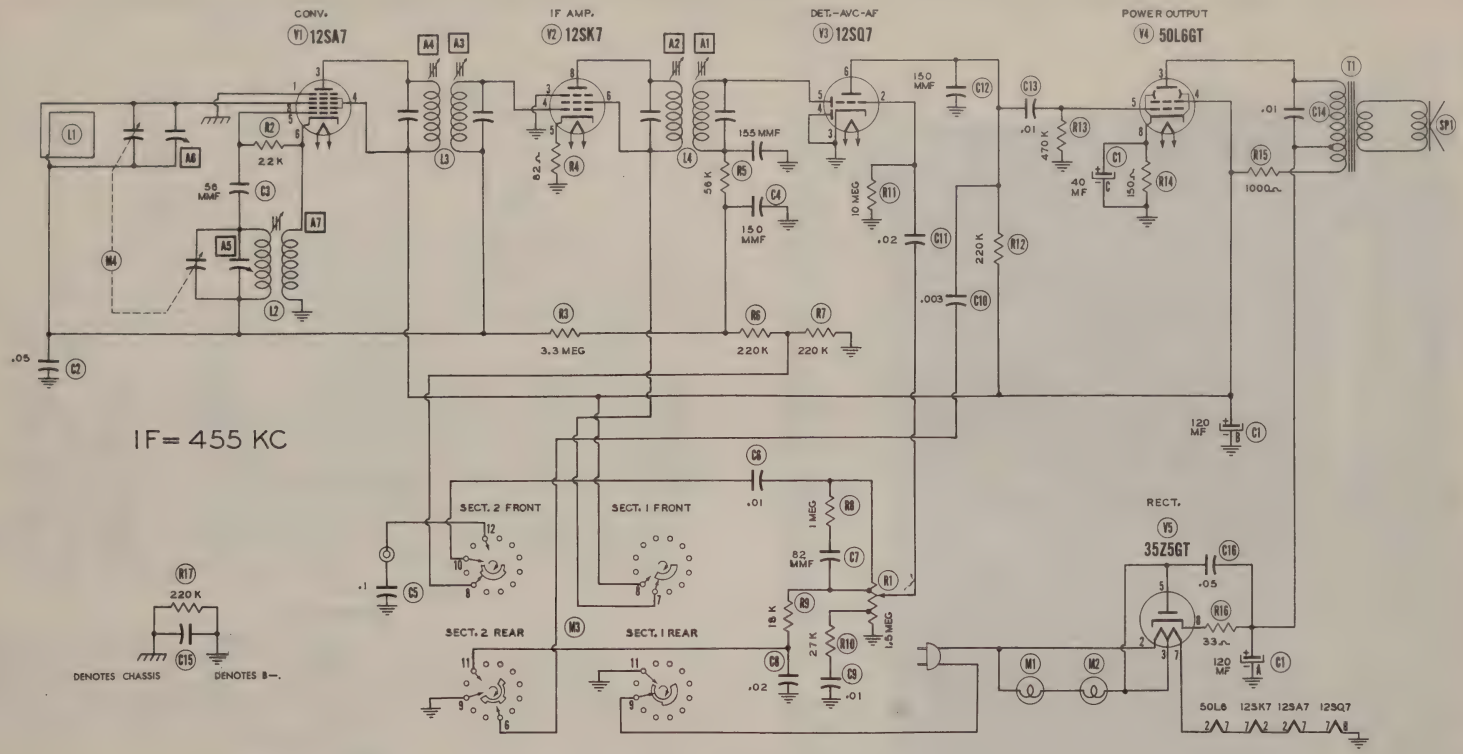
DENVER, COLORADO

RCA VICTOR MODEL 9X571

SET 107 FOLDER 7

RCA VICTOR MODEL 9X571



V & R TAKEN WITH FUNCTION SWITCH IN POSITION #3 (RADIO-NORMAL)

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	0V.	24VAC	85VDC	85VDC	‡-9.5VDC	0V.	12VAC	0V.
V 2	12SK7	0V.	24VAC	0V.	0V.	1VDC	85VDC	35VAC	85VDC
V 3	12SQ7	0V.	-.4VDC	0V.	0V.	-.3VDC	55VDC	12VAC	0V.
V 4	50L6GT	0V.	85VAC	100VDC	85VDC	0V.	110VDC	35VAC	5.2VDC
V 5	35Z5GT	0V.	117VAC	110VAC	0V.	110VAC	117VAC	85VAC	115VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SA7	220KΩ	27Ω	†1000Ω	†1000Ω	22KΩ	1Ω	13Ω	3Ω Meg.
V 2	12SK7	220KΩ	27Ω	0Ω	3.7 Meg.	82Ω	†1000Ω	40Ω	†1000Ω
V 3	12SQ7	220KΩ	10 Meg.	0Ω	0Ω	500KΩ	†220KΩ	13Ω	0Ω
V 4	50L6GT	Inf.	90Ω	†375Ω	†1000Ω	470KΩ	†56Ω	40Ω	150Ω
V 5	35Z5GT	Inf.	120Ω	115Ω	Inf.	115Ω	120Ω	90Ω	60KΩ

† MEASURED FROM PIN 8 OF V5.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE MODEL
225 (Ch. 528.171-1)

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

SILVERTONE MODEL
225 (Ch. 528.171-1)

SILVERTONE MODEL 225

TRADE NAME	Silvertone, Model 225 (Ch. 528.171-1)
SUPPLIER	Sears Roebuck and Co., 925 So. Homan St., Chicago, Illinois
TYPE SET	Three Power Operated Portable Superheterodyne Receiver with Loop Antenna
TUBES (FIVE)	Types 1U4 RF Amp., 1R5 Converter, 1U4 IF Amp., 1U5 DET-AVC-AF, 3V4 Power Output,
POWER SUPPLY	110-120 Volts AC-DC or 9 Volts "A" Supply and 90 Volts "B" Supply In Pack Form
RATING	.14 Amp. at 117 Volts AC or 62MA at 9 Volts DC and 15MA at 90 Volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning gang fully closed and set pointer to last reference mark at the low frequency end of dial backing plate.

Use battery power when available. If AC power is used, use an isolation transformer when available. If not, connect a .1 MFD capacitor in series with low side of the signal generator and B-.

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 6 (Grid) of 1R5 (V2). Low side to B-.	455KC (400 ∿ Mod.)	Tuning gang fully open	Across voice coil	A1, A2, A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer reduce dummy antenna to 200MMF to reduce hum modulation
2.	.1MFD	High side to pin 6 (Grid) of 1U4 (V1). Low side to B-.	1625KC	"	"	A5	"
3.		Loop	1400KC	Tune for max. output	"	A6, A7	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. Check to see if pointer is at the 1400KC calibration mark on dial backing plate. If not, repeat steps 2 and 3 until pointer coincides with 1400KC calibration mark.

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		SILVERTONE PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	1U4	1U4	6AR	
V2	Converter	1R5	1R5	7AT	
V3	IF Amp.	1U4	1U4	6AR	
V4	DET-AVC-AF	1U5	1U5	6BW	
V5	Power Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	50	150	T18-296			UP4415C11		TVA-3433	▪ Filter
B	30	150							■ Filter
C	200	25							▲ Filament Bypass
C2	.05	200	T16-152	P288-05	DF-503	PTE4S5		2TM-15	RF Grid Filter
C3	.05	400	T16-179	P488-05	DF-503	PTE4S5		72P51	Line Isolation
C4	10	500	T15-186	1468-00001	D6-100	5W5Q1	GPIK-10	MS-41	Osc. Grid Cap.
C5	.02	400	T16-150	P488-02	DF-203	PTE4S2		4TM-12	Osc. Anode Dec.
C6	.05	200	T16-152	P288-05	DF-503	PTE4S5		2TM-15	AVC Filter
C7	.005	600	T16-153	P688-005	D6-502	PTE6D5	811-005	6TM-25	IF Grid Filter
C8	.1	200	T16-157	P288-1	DF-104	PTE4P1		2TM-1	Filament Bypass
C9	.1	200	T16-157	P288-1	DF-104	PTE4P1		2TM-1	Filament Bypass
C10A	200		T17-103	SI200	D6-201	5W5T2	GP2K-200	}	Diode RF Filter
B	2000			SI2000	D6-202	PTE6D2	GP2M-002	}	Audio Coupling
C	5000			BPD-005	DD-502	PTE6D5	811-005	} 34C4	AF Amp. Screen
D	100			SI100	D6-101	5W5T1	GPIK-100	}	AF Amp. Plate
E	5000			BPD-005	DD-502	PTE6D5	811-005	}	Audio Coupling
C11	.005	600	T16-153	P688-005	DD-502	PTE6D5	811-005	6TM-25	Output Plate
C12	.05	400	T16-179	P488-05	DF-503	PTE4S5		4TM-15	Line Filter

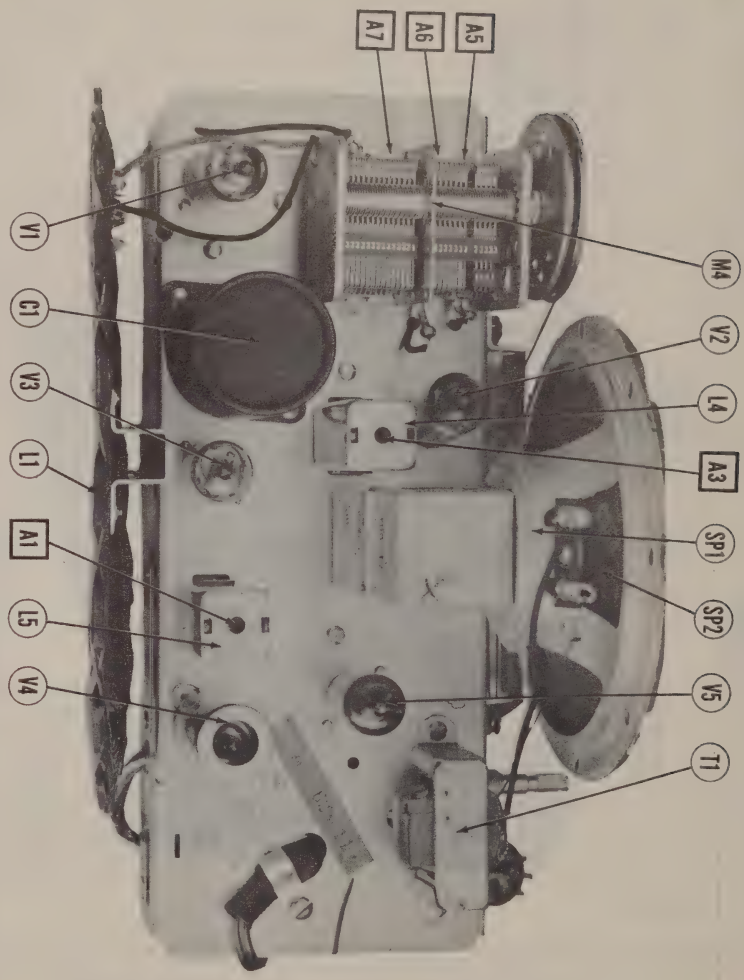
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	
R1A	1 Meg.	½	T24-186	Q13-137	AM-63-Z	BSK-70-S	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-2	SW-A2	Not Req.	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.	
R2	4.7 Meg.	½	T60-669	BTS-4.7 Meg.	RF Amp. Grid
R3	1500Ω	½	T60-729	BTS-1500	Filament String
R4	680Ω	½	T60-708	BTS-680	Filament String
R5	22KΩ	½	T60-744	BTS-22K	RF Amp. Plate
R6	27KΩ	½	T60-745	BTS-27K	Osc. Anode Decoupling
R7	100KΩ	½	T60-727	BTS-100K	Osc. Grid
R8	10 Meg.	½	T60-728	BTS-10 Meg.	IF Amp. Grid
R9	470Ω	½	T60-770	BTS-470	Filament String
R10	2.2 Meg.	½	T60-726	BTS-2.2 Meg.	AVC Network
R11	47KΩ	½	T60-730	BTS-47K	Diode Filter
R12	10 Meg.	½	T60-728	BTS-10 Meg.	AF Amp. Grid
R13	4.7 Meg.	½	T60-669	BTS-4.7 Meg.	AF Amp. Screen
R14	1 Meg.	½	T60-668	BTS-1 Meg.	AF Amp. Plate
R15	820KΩ	½	T60-799	BTS-820K	Output Grid
R16	330Ω	½	T60-704	BTS-330	Filament String
R17	2000Ω	10	T60-757	1 3/4A-2000	Filament Dropping-Wire Wound
R18	1500Ω	½	T60-729	BTS-1500	Filter
R19	110Ω	3	T60-796		Surge Limiter-Wire Wound

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	9000Ω	3.6Ω	700Ω	.6Ω	T80-228	A-3879	A-2932	RO-16	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V. C. IMP.		ST-105		
SP1	PM	3.6Ω	T79-380	MOD. P5-X	5A07	
	CONE DIA.	V. C. DIA.				
SP2	4 3/4"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	SILVERTONE PART No.	MEISSNER PART No.	
L1	Loop Ant.	.8Ω		T82-66		
L2	RF Coil	12.8Ω	11Ω *	T10-535		* Tap at 7.1Ω
L3	Osc. Coil	7.5Ω	14.2Ω	T10-553	14-1074	
L4	1st IF	20Ω	20Ω	T10-508	16-6668	
L5	2nd IF	20Ω	20Ω	T10-508	16-6669	

SELENIUM RECTIFIER

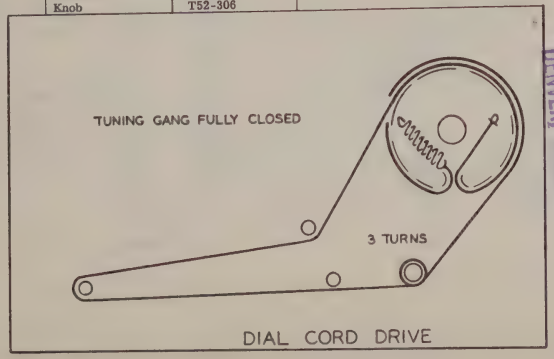
ITEM No.	RATING	REPLACEMENT DATA			NOTES
	CURRENT	SILVERTONE PART No.	SYLVANIA PART No.	SELETRON PART No.	
M1	.065ADC	T83-642	NB-5	5M4	

BATTERIES

ITEM No.	VOLTAGE	SILVERTONE PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M2	9 V "A" 90 V "B"	6404			754			G6M60	

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M3	Switch	T69-186	AC/DC-Battery
M4	3 Gang Var. Cap.	T19-208	(38-556MMF, 15-230MMF, 11-162MMF)
	Dial Pointer	T58-78	
	Dial Scale	T67-549	
	Cabinet	T42-466	
	Knob	T52-306	



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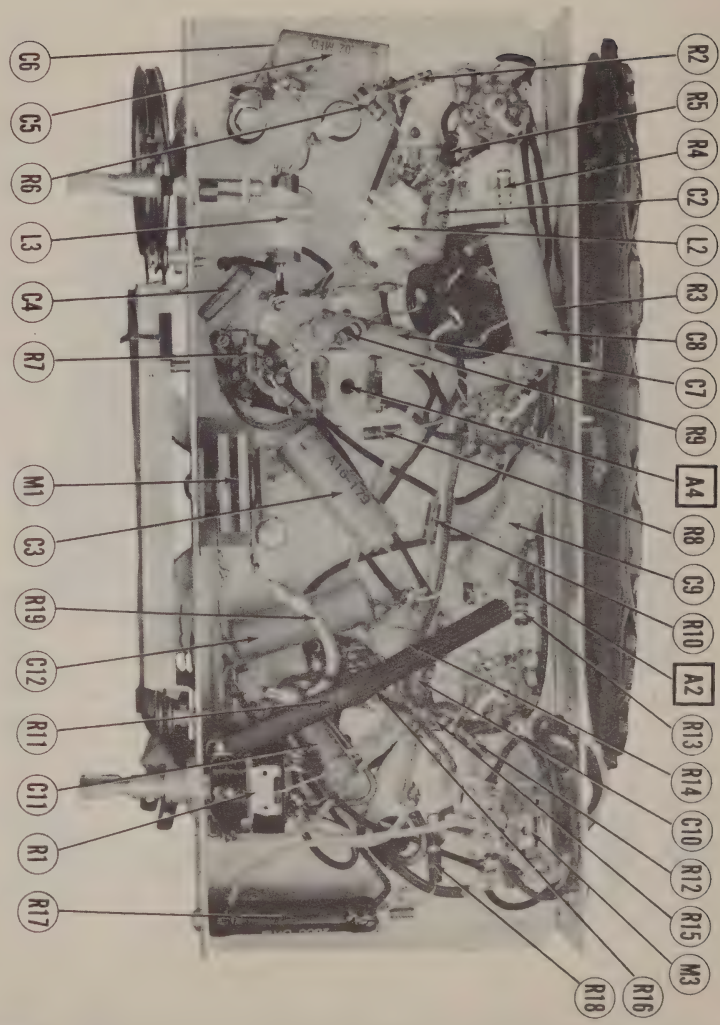
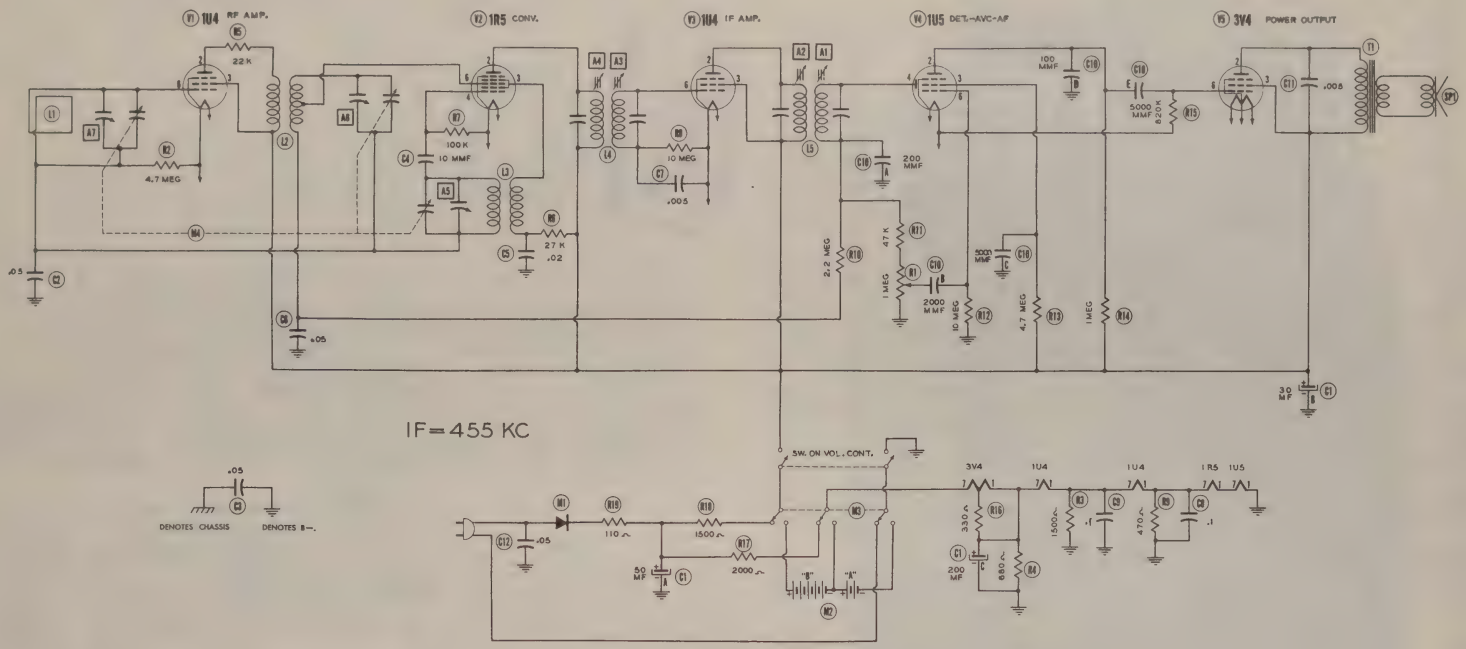
CHASSIS—BOTTOM VIEW





POWER SWITCH MUST BE ON FOR B+ RESISTANCE MEASUREMENTS.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1U4	3.8VDC	55VDC	85VDC	0V	3.8VDC	.2VDC	5VDC
V 2	1R5	1.2VDC	85VDC	45VDC	8-10VDC	1.2VDC	-.1VDC	2.4VDC
V 3	1U4	2.4VDC	85VDC	85VDC	-.6VDC	2.4VDC	.1VDC	3.8VDC
V 4	1U5	0V	11VDC	4.6VDC	-.2VDC	0V	0V	1.2VDC
V 5	3V4	5VDC	80VDC	85VDC	0V	6.4VDC	.2VDC	7.8VDC

‡ TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1U4	*	†23KΩ	†1.6KΩ	Inf.	*	4.7 Meg.	*
V 2	1R5	*	†1.6KΩ	†28KΩ	100KΩ	*	3.2 Meg.	*
V 3	1U4	*	†1.6KΩ	†1.6KΩ	3.2 Meg.	*	10 Meg.	*
V 4	1U5	*	†1 Meg.	†4.7 Meg.	1 Meg.	Inf.	10 Meg.	*
V 5	3V4	*	†2.3KΩ	†1.6KΩ	Inf.	*	820KΩ	*

* DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE
† MEASURED FROM OUTPUT OF M1

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

SILVERTONE MODEL 245 (Ch. 548.358-1)

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SILVERTONE MODEL
245 (Ch. 548.358-1)

SILVERTONE MODEL
245 (Ch. 548.358-1)

SILVERTONE MODEL 245

TRADE NAME	Silvertone, Model 245 (Ch. 548.358-1)		
SUPPLIER	Sears Roebuck and Co., 925 So. Homan St., Chicago, Illinois		
TYPE SET	AC Operated Phono Player with 2 Tube Amplifier		
TUBES (TWO)	Types 12AT6 AF Amp., 50C5 Power Output		
POWER SUPPLY	110-120 Volts AC	RATING	.35 Amp. at 117 Volts AC

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	AF Amp.	12AT6	12AT6	7BT	
V2	Power Output	50C5	50C5	7CV	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	150	1010-A	┌AF888D		┌UP44415		┌TVL-3440	Filter-Red
B	40	150		└PRS25/25		└BR202A		└TVA-1205	Filter-Red
C	20	150							Filter-Yellow
D	20	25							Output Cath. -Blue
C2	10000		*	SI10000	D6-103	PTE4S1	811-01	36C1	Audio Coupling
C3	10000			SI10000	D6-103	PTE4S1	811-01	36C1	Tone Compensation
C4	10000		†	SI10000	D6-103	PTE4S1	811-01	36C1	Audio Coupling
C5	.1	200	804	P288-1	DF-104	PTE4P1		2TM-1	Line Isolation

* Items C2 and R3 are combined into one unit obtainable under MFGR'S Part No. 813.
† Items C4 and R4 are combined into one unit obtainable under MFGR'S Part No. 819-A.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: Silvertone PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ	½	401	Q13-133	AG-60-Z	BSK-60-S	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SWB	Not Req.	Attach to R1A per instructions
R2A	500KΩ	½	408	Q13-133	AG-60-Z	BSK-60	Tone control
B	Shaft		Not Req.	Not Req.	KSS-3	Not Req.	Attach to R2A per instructions

RESISTORS

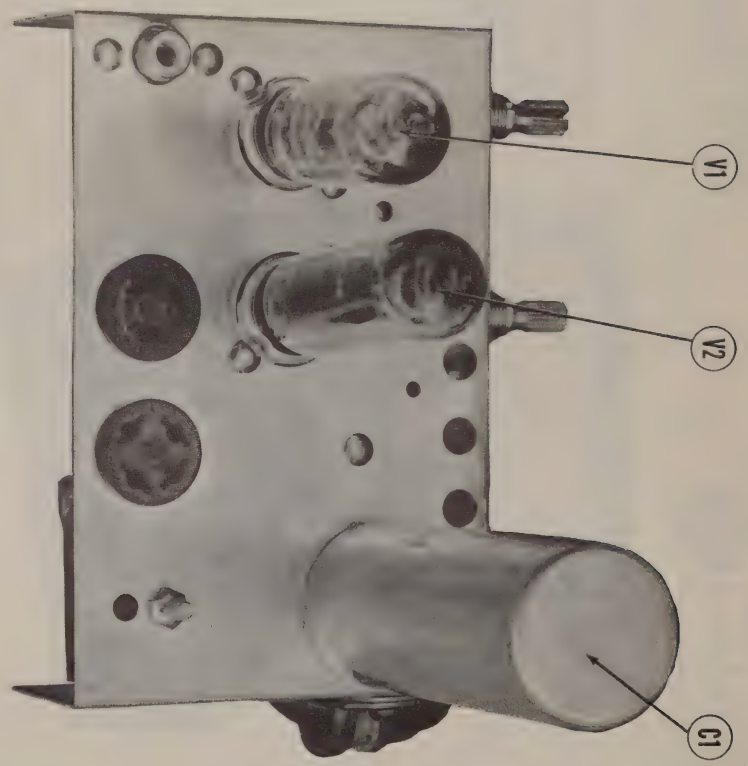
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	IRC PART No.	IDENTIFICATION CODES
R3	5 Meg.	½	*	BTS-4.7 Meg.	AF Amp. Grid
R4	100KΩ	½	†	BTS-100K	AF Amp. Plate
R5	510KΩ	½	502	BTS-470K	Output Grid
R6	150Ω	½	505	BTS-150	Output Cathode
R7	1 Meg.	½	516	BTS-1 Meg.	Feedback
R8	1000Ω	½	539	BTS-1000	Filter
R9	270Ω	1	602	BTA-270	Filter
R10	100Ω	½		BTS-100	Surge Limiter-See Note 1

* Items R3 and C2 are combined into one unit obtainable under MFGR'S Part No. 813.
† Items R4 and C4 are combined into one unit obtainable under MFGR'S Part No. 819-A.
Note 1. Some models use a 47Ω resistor in this application.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: SILVERTONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T1	2000Ω	3.5Ω	170Ω	.7Ω	Part of SP1	A-3332 ①	A-3025 ①	RO-2 ①	① Bend mounting tabs down and mount on original bracket.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
	FIELD	V. C. IMP.		ST-105		
SP1	PM	3.5Ω	2601	MOD. P5-X②	5A07 ②	② Remount output transformer.
	CONE DIA.	V. C. DIA.				
SP2	4 5/8"	9/16"				

SELENIUM RECTIFIER

ITEM No.	RATING: CURRENT	REPLACEMENT DATA: SILVERTONE PART No.	SYLVANIA PART No.	SELETRON PART No.	NOTES
M1	.040ADC	2723	NB-5	5M4	

PHONO CARTRIDGE and NEEDLE

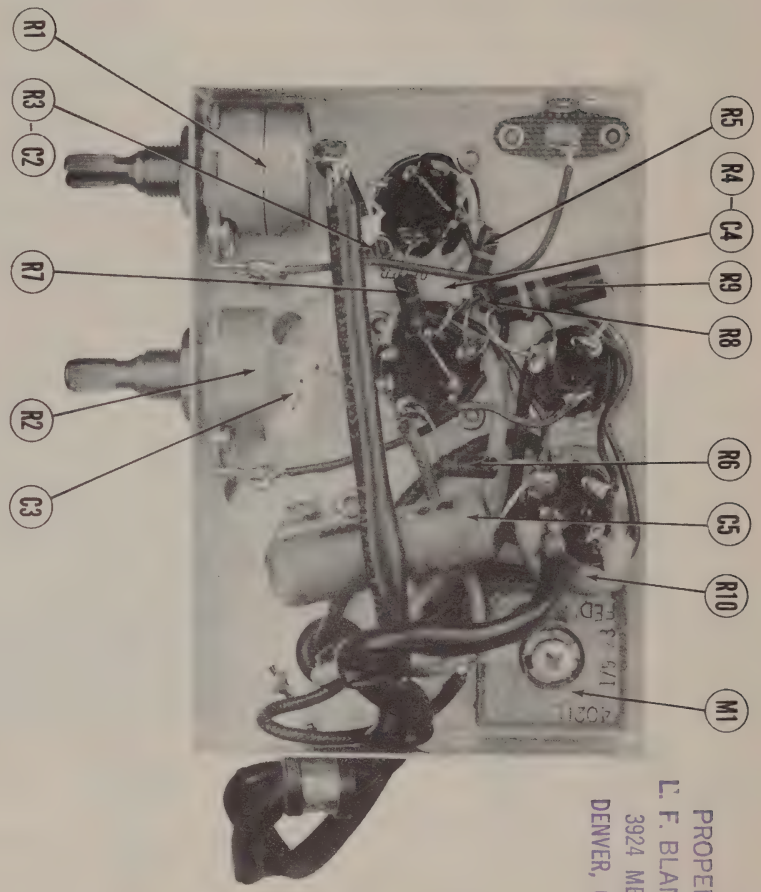
ITEM No.	REPLACEMENT DATA: SILVERTONE PART No.	ASTATIC PART No. CARTRIDGE	ASTATIC PART No. NEEDLE	SHURE PART No. CARTRIDGE	SHURE PART No. NEEDLE	REMARKS
M2	2530	GC-AG-M 510-GC-AG *	G-AG			* Tone arm complete

ASTATIC AND SHURE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
	Cabinet	2107	
	Knob	2403	Volume
	Knob	2404	Tone

CHASSIS—BOTTOM VIEW



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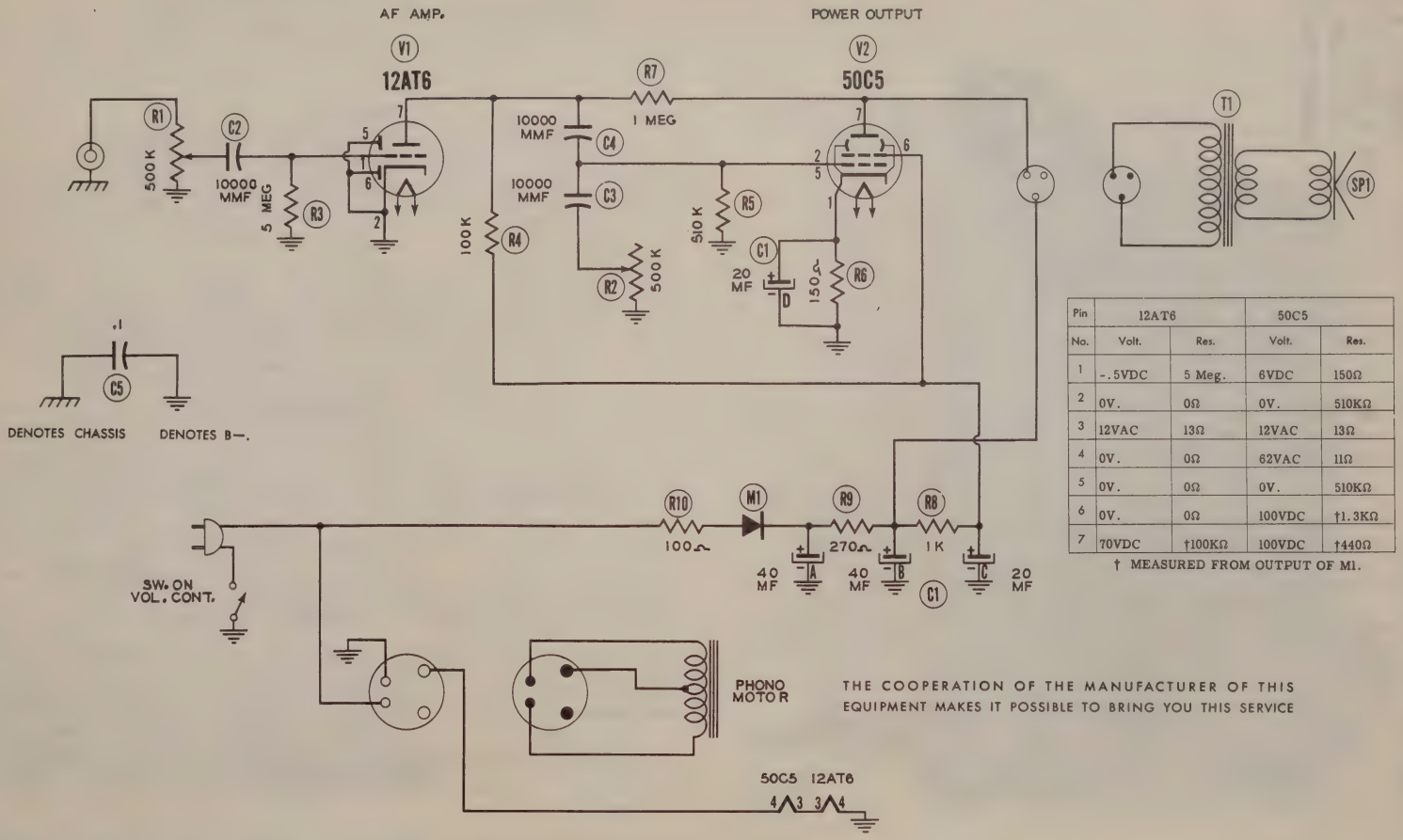

Pin	12AT6		50C5	
No.	Volt.	Res.	Volt.	Res.
1	-.5VDC	5 Meg.	6VDC	150Ω
2	0V.	0Ω	0V.	510KΩ
3	12VAC	13Ω	12VAC	13Ω
4	0V.	0Ω	62VAC	11Ω
5	0V.	0Ω	0V.	510KΩ
6	0V.	0Ω	100VDC	†1.3KΩ
7	70VDC	†100KΩ	100VDC	†440Ω

† MEASURED FROM OUTPUT OF M1.

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

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TV-300, TV-301 (CH. TW), TV-304,
TV-305 (CH. TX)

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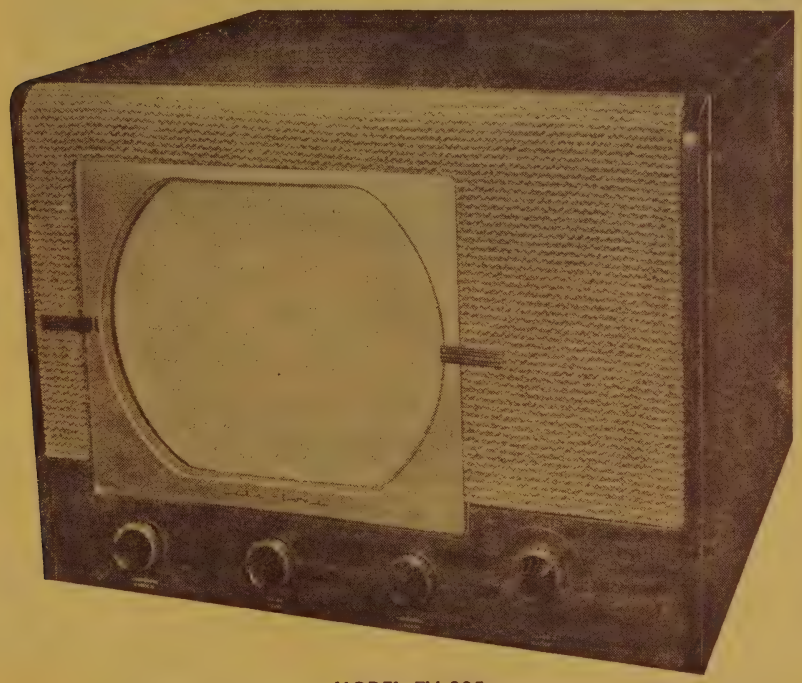

MODEL TV-305

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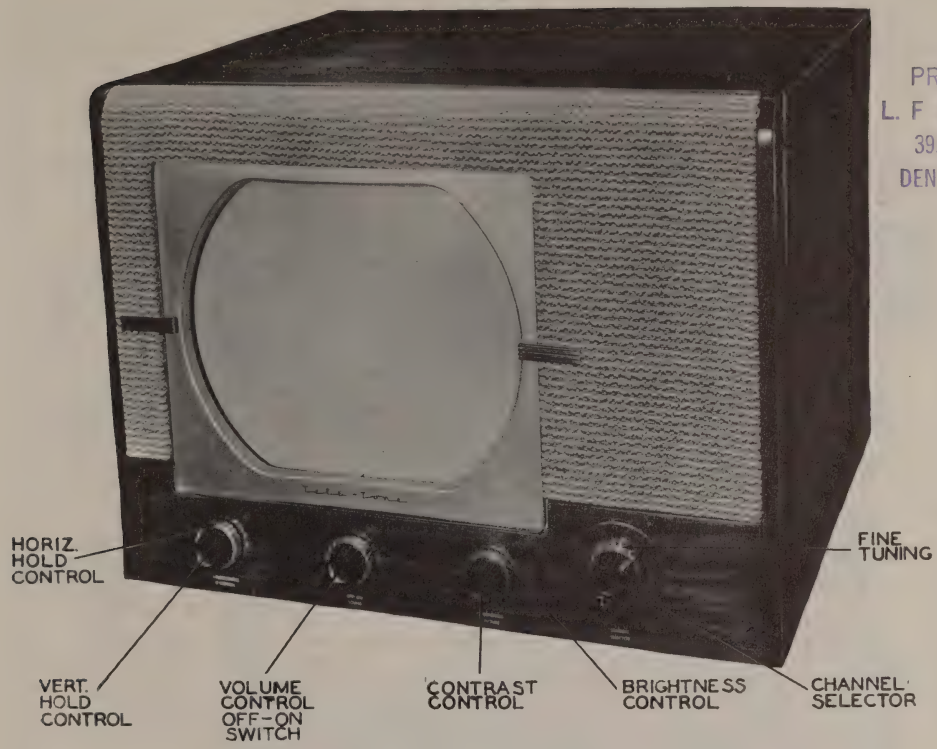

TELE-TONE MODELS TV-300, TV-301, TV-304, TV-305

TELE-TONE MODEL TV-305

TRADE NAME	Tele-Tone Models TV-300, TV-301 (Ch. TW), TV-304, TV-305 (Ch. TX)
MANUFACTURER	Tele-Tone Radio Corp., 540 W. 58th St., New York, New York
TYPE SET	Television Receiver
TUBES	Twenty One
POWER SUPPLY	110-120 Volts AC-60 Cycles
RATING	1.8 Amp. at 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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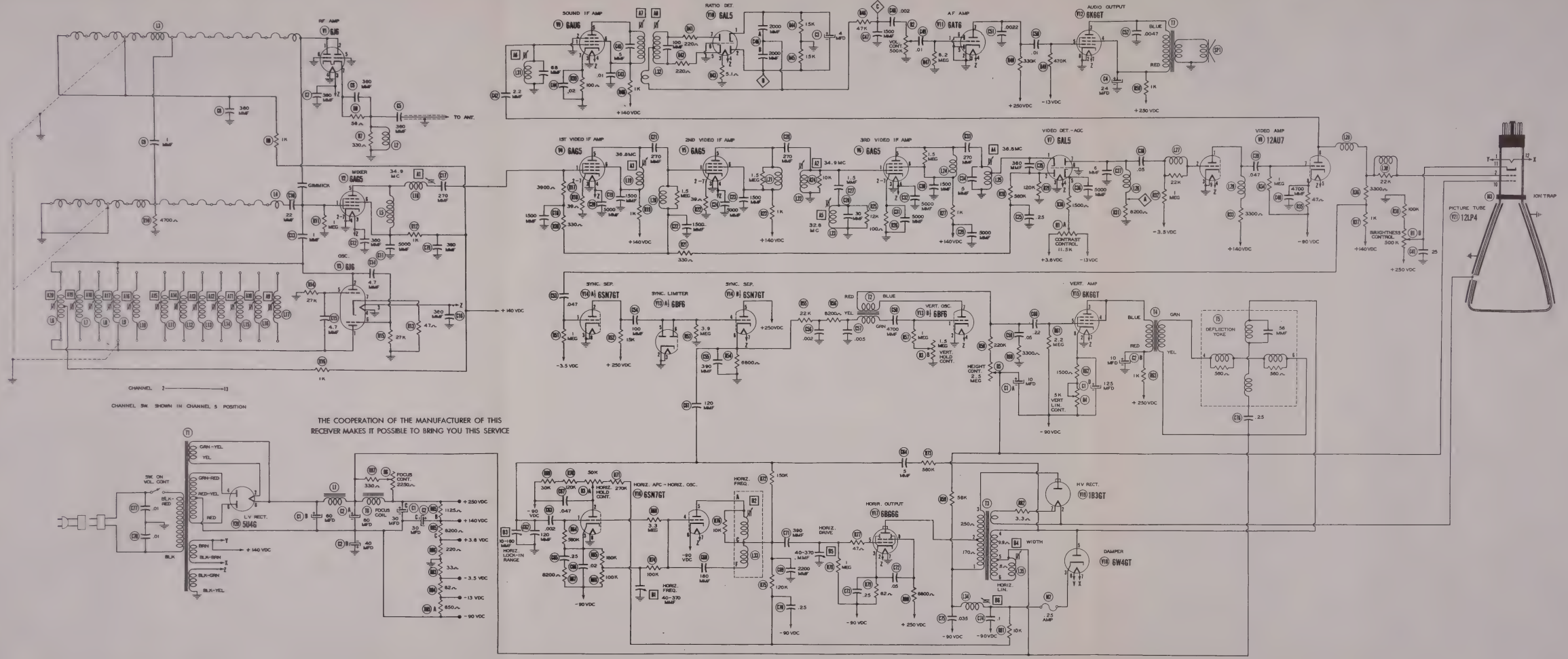

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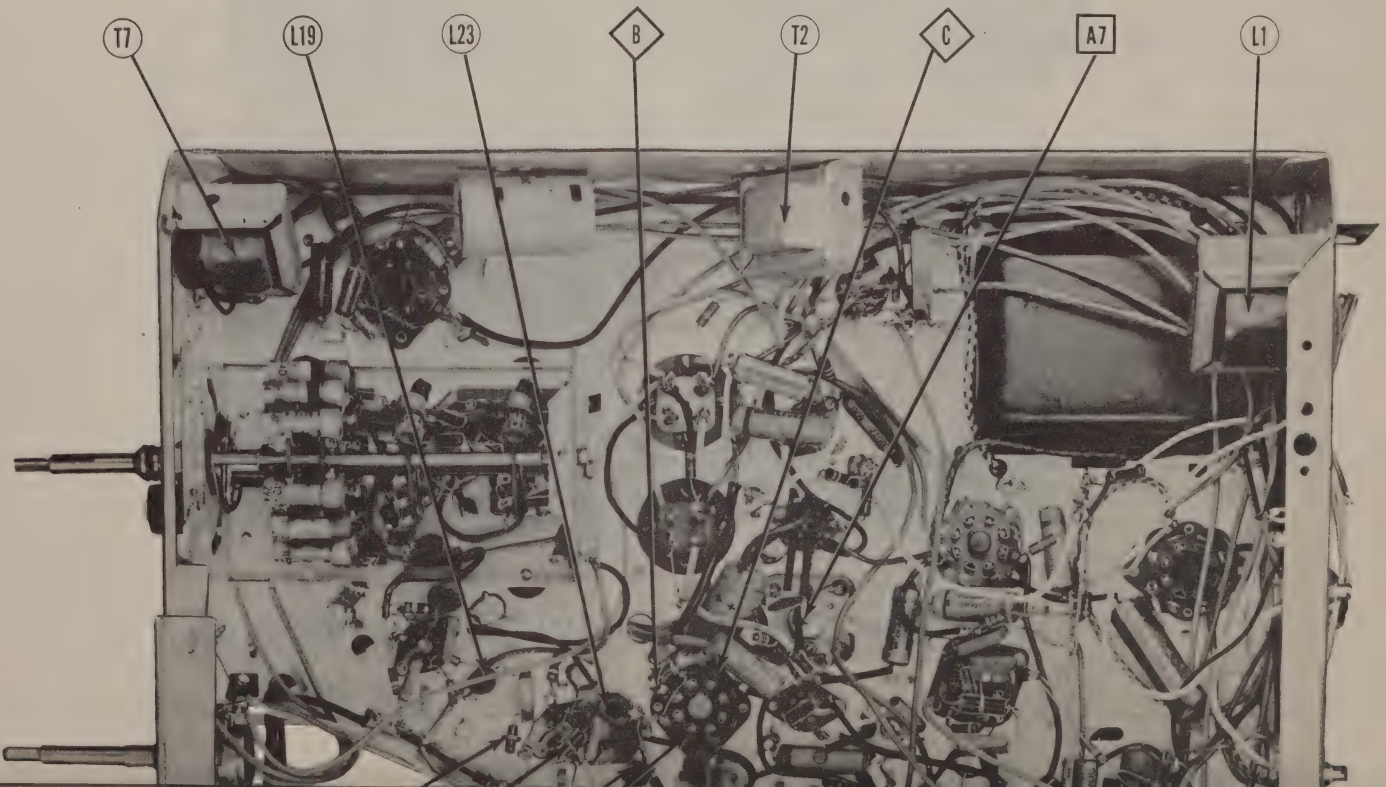
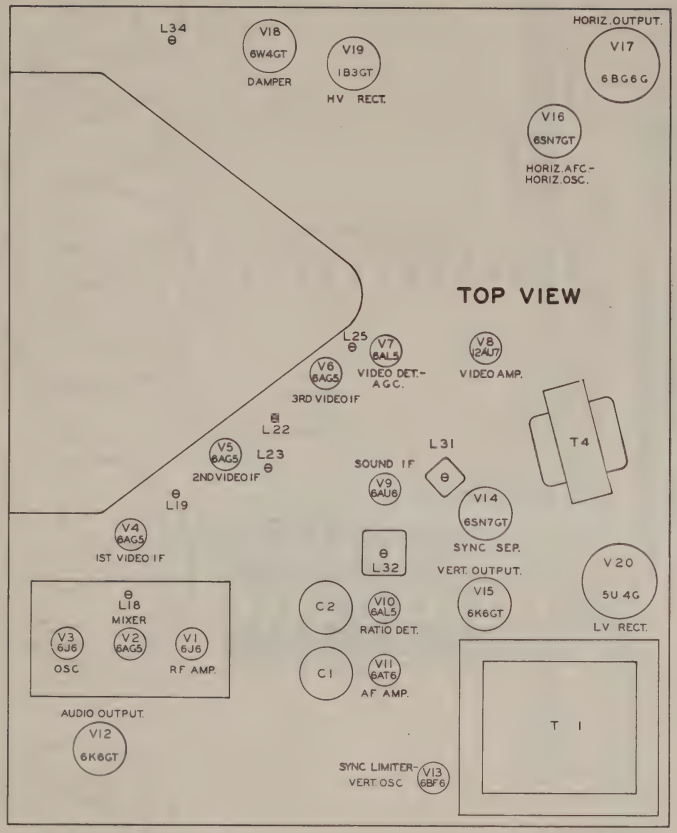
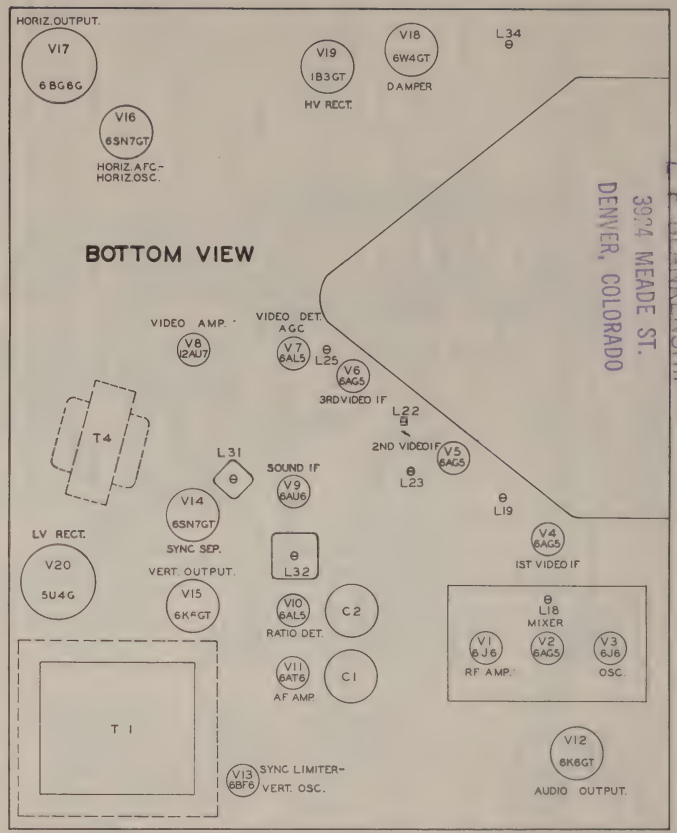
CHASSIS TOP VIEW


T7
L19
L23
B
T2
C
A7
L1





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TUBE PLACEMENT CHART

TELE-TONE MODELS TV-300, TV-301, TV-304, TV-305

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

If picture tube is to be removed while set is being aligned the high voltage lead should be securely taped and dressed away from the chassis.

VIDEO IF ALIGNMENT

Remove the oscillator tube (V3) from its socket to prevent erroneous indications.
Adjust contrast control to maintain a minus 2 volts on pin 7 of 6AL5 (V7).

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	34.9MC (Unmod.)	Any	DC Probe to Point (A). Common to chassis.	A1, A2	Adjust for maximum deflection. Attenuate signal generator to maintain a maximum -1.5 volt reading.
2.	Direct	"	36.8MC (Unmod.)	"	"	A3, A4	"
3.	Direct	"	32.8MC (Unmod.)	"	"	A5	Adjust for MINIMUM deflection. A2 should be readjusted as described in step 1.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	35MC (10MC SWP)	32.8MC 34.9MC 36.8MC 37.3MC	Any	Vert. Amp. to Point (A). Low side to chassis.		Check for response curve similar to figure 1. If necessary slightly retouch A1 thru A4 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
5.	Direct	High side to Point A. Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point (B). Common to chassis.	A6, A7	Adjust for maximum output.
6.	Direct	"	"	"	DC Probe to Point (C). Common to chassis.	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 % modulation and 450KC sweep. Use 120 % sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	Direct	High side to Point A. Low side to chassis.	4.5MC (450KC Sweep)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A6, A7	Disconnect stabilizer capacitor C3. Adjust for maximum amplitude and symmetry as per figure 2.
6.	Direct	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A8	Reconnect capacitor C3. Adjust A8 to place 4.5MC at center of crossover lines as per figure 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines.

OSCILLATOR ALIGNMENT -12 COIL TUNER

Replace the local oscillator tube V3 in its socket.
Set the fine tuning control to the mid-position of its range.
The RF and Mixer portion of this receiver are pre-set at the factory and should not require adjustment in the field.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to ungrounded antenna terminal. Low side to chassis.	57MC (10MC SWP)	55.25MC 59.75MC	2	Vert. Amp. to Point (A). Low side to chassis.	A9	Adjust to place sound marker as shown in figure 4. The video marker should be at 50% of response.
			63MC (10MC SWP)	61.25MC 65.75MC	3		A10	
			69MC (10MC SWP)	67.25MC 71.75MC	4		A11	
			79MC (10MC SWP)	77.25MC 81.75MC	5		A12	
			85MC (10MC SWP)	83.25MC 87.75MC	6		A13	
			177MC (10MC SWP)	175.25MC 179.75MC	7		A14	
			183MC (10MC SWP)	181.25MC 185.75MC	8		A15	
			189MC (10MC SWP)	187.25MC 191.75MC	9		A16	
			195MC (10MC SWP)	193.25MC 197.75MC	10		A17	
			201MC (10MC SWP)	199.25MC 203.75MC	11		A18	
			207MC (10MC SWP)	205.25MC 209.75MC	12		A19	
			213MC (10MC SWP)	211.25MC 215.75MC	13		A20	

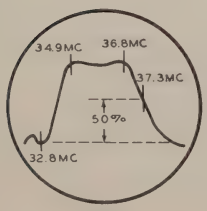


FIG. 1

FIG. 2

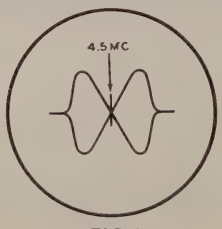


FIG. 3

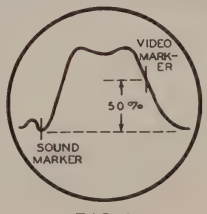


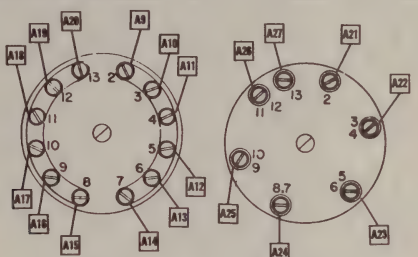
FIG. 4

ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT-7 COIL TUNER

Replace the local oscillator tube V3 in its socket.
Set the fine tuning control to the mid-position of its range.
The RF and Mixer portion of this receiver are pre-set at the factory and should not require adjustment in the field.
The seven oscillator coils are so arranged that channels 3 thru 12 are paired with one variable and two fixed coils, that is, channels 3 and 4, 5 and 6, etc., which have sufficient band width to cover two channels. Adjust each oscillator coil to channel that is available in the area that receiver is to be serviced.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	Direct	High side to ungrounded antenna terminal. Low side to chassis.	57MC (10MC SWP)	55.25MC 59.75MC	2	Vert. Amp. to Point A Low side to chassis.	A21	Adjust to place sound markers as shown in figure 4. The video marker should be at 50% of response.
			63MC (10MC SWP) 69MC (10MC SWP)	61.25MC 65.75MC 67.25MC 71.75MC	3 or 4		A22	
			79MC (10MC SWP) 85MC (10MC SWP)	77.25MC 81.75MC 83.25MC 87.75MC	5 or 6		A23	
			177MC (10MC SWP) 183MC (10MC SWP)	175.25MC 179.75MC 181.25MC 185.75MC	7 or 8		A24	
			189MC (10MC SWP) 195MC (10MC SWP)	187.25MC 191.75MC 193.25MC 197.75MC	9 or 10		A25	
			201MC (10MC SWP) 207MC (10MC SWP)	199.25MC 203.75MC 205.25MC 209.75MC	11 or 12		A26	
			213MC (10MC SWP)	211.25MC 215.75MC	13		A27	



12 CHANNEL TUNER 7 CHANNEL TUNER

OSCILLATOR ALIGNMENT POINTS

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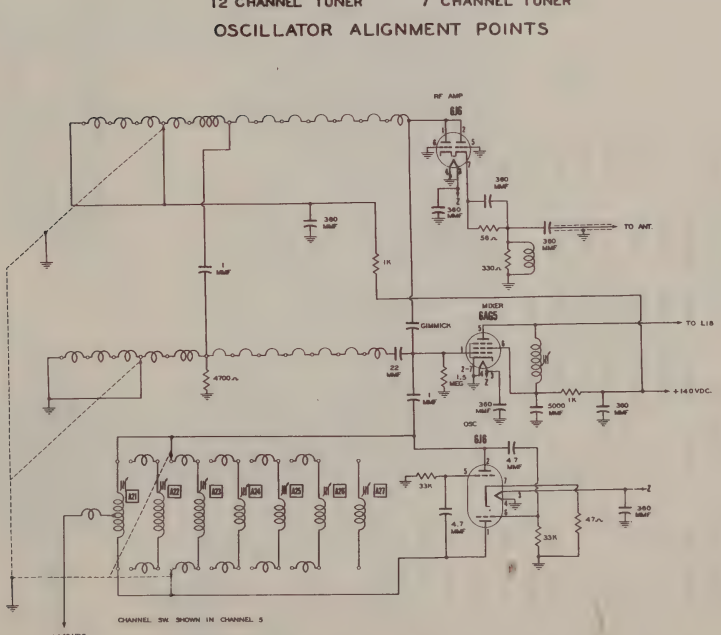
3924 MEADE ST.
DENVER, COLORADO



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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ALTERNATE SEVEN CHANNEL TUNER

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	125VDC	125VDC	6.3VAC	0V.	0V.	0V.	1VDC		
V 2	6AG5	-1.1VDC	0V.	6.3VAC	0V.	130VDC	130VDC	0V.		
V 3	§J6	115VDC	115VDC	6.3VAC	0V.	§-3.9VDC	§-3.9VDC	.4VDC		
V 4	6AG5	-3VDC	0V.	0V.	6.3VAC	135VDC	135VDC	0V		
V 5	6AG5	-3VDC	0V.	0V.	6.3VAC	135VDC	135VDC	0V.		
V 6	6AG5	0V.	1.2VDC	0V.	6.3VAC	135VDC	135VDC	1.2VDC		
V 7	6AL5	0V.	-13VDC	0V.	6.3VAC	-13VDC	0V.	-.4VDC		
V 8	12AU7	120VDC	-.6VDC	0V.	6.3VAC	6.3VAC	70VDC	-90VDC	-90VDC	0V.
V 9	6AU6	0V.	0V.	0V.	6.3VAC	125VDC	125VDC	.9VDC		
V 10	6AL5	.1VDC	-.1VDC	1.4VAC	6.3VAC	.1VDC	0V.	.1VDC		
V 11	6AT6	-.4VDC	0V.	0V.	6.3VAC	0V.	0V.	60VDC		
V 12	6K6GT	250VDC	0V.	200VDC	215VDC	-4VDC	-13VDC	6.3VDC	6.3VAC	0V.
V 13	6BF6	-46VDC	0V.	0V.	6.3VAC	-.6VDC	-.6VDC	270VDC 100VDC		
V 14	6SN7GT	-.6VDC	130VDC	0V.	-.6VDC	250VDC	11VDC	6.3VAC	0V.	
V 15	6K6GT	0V.	0V.	230VDC	230VDC	-65VDC	0V.	6.3VAC	-50VDC -60VDC	
V 16	6SN7GT	-80VDC	30VDC	-90VDC	-125VDC	65VDC	-90VDC	6.3VAC	0V.	
V 17	6BG6G	0V.	6.3VAC	-80VDC	0V.	-85VDC	0V.	0V.	175VDC	TOP CAP *
V 18	6W4GT	0V.	0V.	330VDC	0V.	260VDC	0V.	¶	¶	
V 19	1B3GT		• DO NOT MEASURE.							
V 20	5U4G	0V.	330VDC	0V.	380VAC	0V.	380VAC	0V.	330VDC	
V 21	12LP4	¶	70VDC	PIN 10 320VDC	PIN 11 245VDC	PIN 12 ¶				

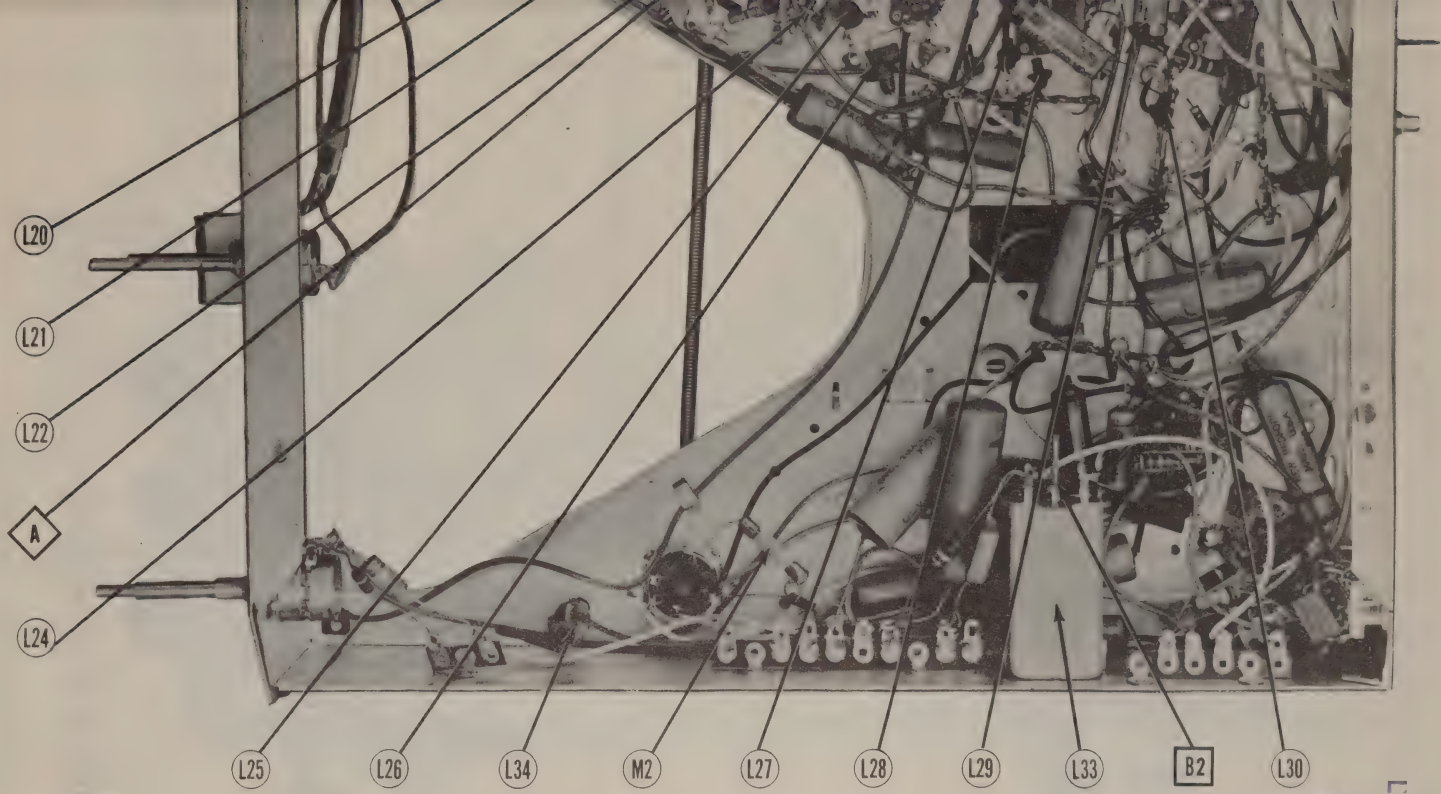
FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
¶ 6.3VAC MEASURED ACROSS FILAMENTS.
• DO NOT MEASURE.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	†2.3KΩ	†2.3KΩ	.1Ω	0Ω	0Ω	0Ω	60Ω		
V 2	6AG5	1 Meg.	0Ω	.1Ω	0Ω	†2.3KΩ	†2.3KΩ	0Ω		
V 3	6J6	†2.3KΩ	†2.3KΩ	.1Ω	0Ω	27KΩ	27KΩ	47Ω		
V 4	6AG5	685KΩ	39Ω	0Ω	.1Ω	†2.3KΩ	†2.3KΩ	39Ω		
V 5	6AG5	680KΩ	39Ω	0Ω	.1Ω	†2.3KΩ	†2.3KΩ	39Ω		
V 6	6AG5	.1Ω	100Ω	0Ω	.1Ω	†2.3KΩ	†2.3KΩ	100Ω		
V 7	6AL5	0Ω	120KΩ	0Ω	.1Ω	1.6KΩ	0Ω	8.2KΩ		
V 8	12AU7	†4.6KΩ	1 Meg.	0Ω	.1Ω	.1Ω	†5.4KΩ	1 Meg.	800Ω	0Ω
V 9	6AU6	1.5Ω	0Ω	0Ω	.1Ω	†2.3KΩ	†2.3KΩ	100Ω		
V 10	6AL5	15KΩ	15KΩ	2Ω	.1Ω	Inf.	0Ω	Inf.		
V 11	6AT6	10 Meg.	0Ω	0Ω	.1Ω	0Ω	0Ω	†330KΩ		
V 12	6K6GT	†200Ω	0Ω	†1.7KΩ	†1.2KΩ	470KΩ	115Ω	.1Ω	0Ω	
V 13	6BF6	2.5 Meg.	0Ω	0Ω	.1Ω	3.9 Meg.	3.9 Meg.	#275KΩ #2.8Meg.		
V 14	6SN7GT	1 Meg.	†15KΩ	0Ω	3.9 Meg.	†200Ω	6.8KΩ	.1Ω	0Ω	
V 15	6K6GT	Inf.	0Ω	†1.8KΩ	†1.8KΩ	2.2 Meg.	Inf.	.1Ω	7.2KΩ 2.2KΩ	
V 16	6SN7GT	750KΩ	#300KΩ	250KΩ	200KΩ	#130KΩ	765Ω	.1Ω	0Ω	
V 17	6BG6G	Inf.	.1Ω	845Ω	Inf.	1 Meg.	Inf.	0Ω	†7KΩ	TOP CAP #210Ω
V 18	6W4GT	Inf.	Inf.	300KΩ	Inf.	†60Ω	Inf.	8.2KΩ	8.2KΩ	
V 19	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #360Ω
V 20	5U4G	Inf.	9.5KΩ	Inf.	800Ω	Inf.	800Ω	Inf.	9.5KΩ	
V 21	12LP4	8.2KΩ	†5.2KΩ	PIN 10 #56KΩ	PIN 11 9.5KΩ	PIN 12 8.2KΩ				

FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
† MEASURED FROM PIN 2 OF V20.
# MEASURED FROM PIN 3 OF V18.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



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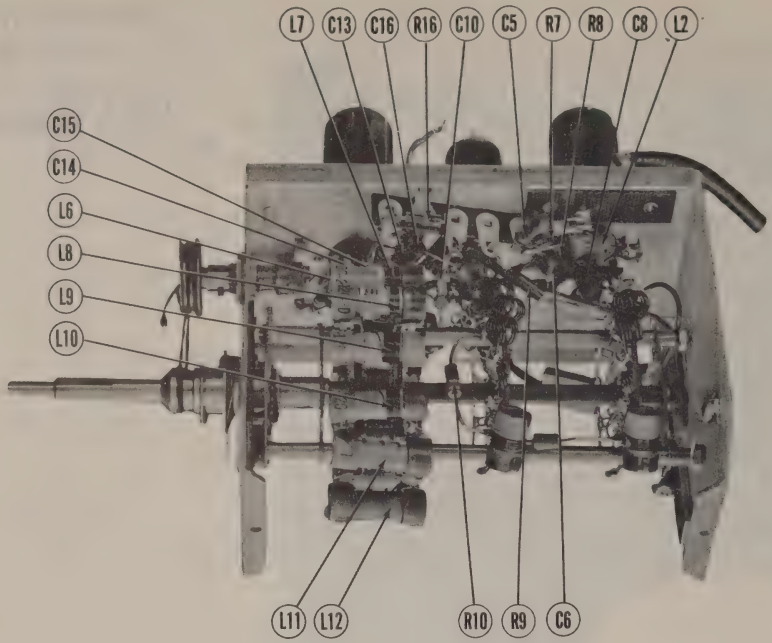
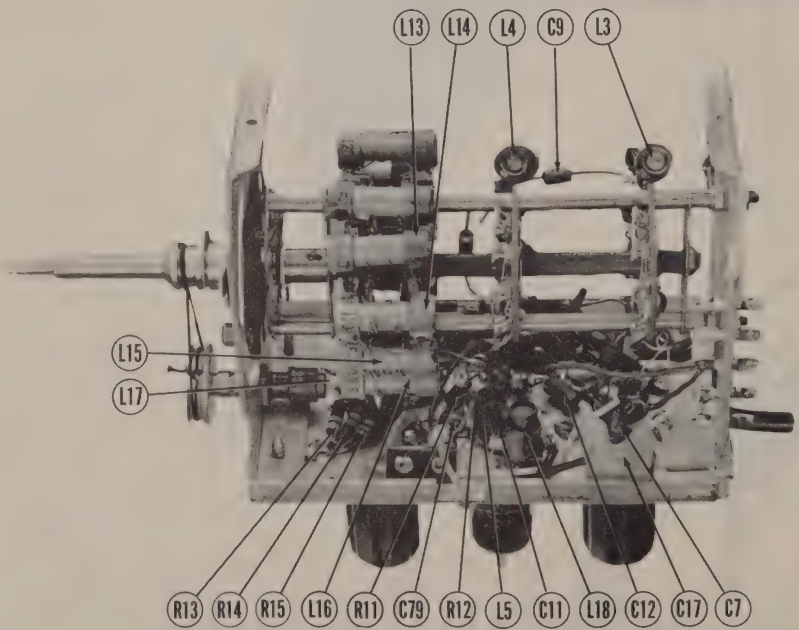
3324 MAGEE ST.
DENVER, COLORADO

CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

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3924 MEADE ST.
DENVER, COLORADO

CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

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3924 MEADE ST.
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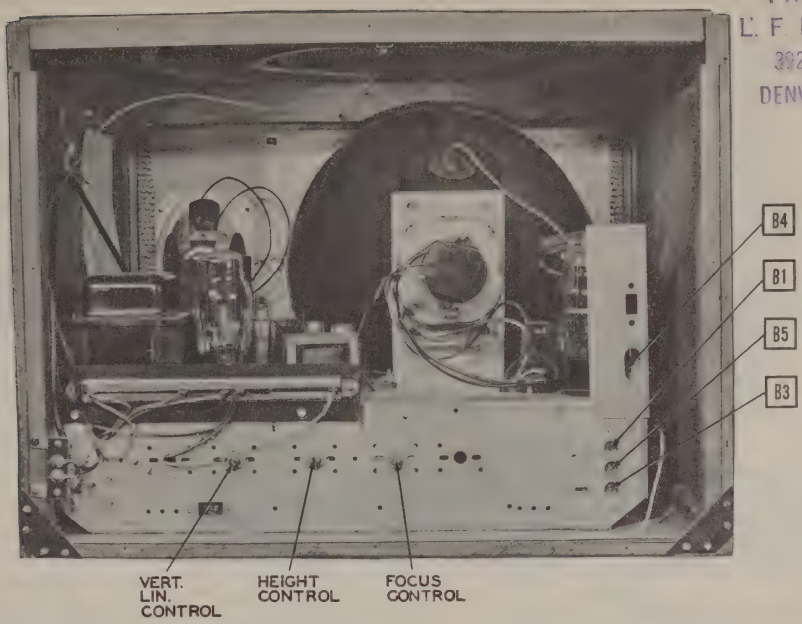
CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO



CABINET–REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

HORIZONTAL OSCILLATOR ALIGNMENT CHECK

Tune in a test pattern and turn horizontal hold control to extreme counter-clockwise position. Picture should remain in synchronization.
Turn channel selector switch to another channel and then back to original channel. Normally, the picture should be out of synchronization.
Turn the control clockwise and the picture should slowly begin to synchronize and finally lock-in. This should occur when the control is approximately 90^0 from the extreme counter-clockwise position.
The picture should remain in synchronization for another 90^0 in the clockwise direction of the control. At the extreme clockwise position the picture should again drop out of synchronization and $3\frac{1}{2}$ to $4\frac{1}{2}$ bars should be seen sloping downward to the right. If the receiver fails to hold synchronization during this check with the hold control at the extreme counter-clockwise position or fails to hold synchronization for at least 60^0 in the clockwise direction from the point when it drops into "sync" it will be necessary to align the horizontal oscillator circuit as follows:

(A) HORIZONTAL OSCILLATOR ALIGNMENT

Turn the horizontal hold control to extreme clockwise position. Tune in test pattern and adjust trimmer B1 until picture is out of sync and shows $3\frac{1}{2}$ to $4\frac{1}{2}$ bars sloping downward to the right. If the trimmer has insufficient range, set it to its mid-position (one turn from the right) and adjust slug B2 until bars appears.

(B) HORIZONTAL LOCKING ALIGNMENT

Turn the horizontal hold control to full counter-clockwise position. Switch to another channel and back to the original again. Slowly turn horizontal hold control clockwise and note the least number of diagonal bars present just before picture syncs. If more than $4\frac{1}{2}$ bars are present just before picture syncs adjust "horizontal lock" trimmer B3 slightly clockwise. If less than $3\frac{1}{2}$ bars are present adjust B3 slightly counter-clockwise and switch channel selector to another channel and back again. Recount bars present at the "lock-in" point. Repeat this procedure until $3\frac{1}{2}$ to $4\frac{1}{2}$ bars are present.
Repeat steps (A) and (B) until conditions exist as outlined under "HORIZONTAL OSCILLATOR ALIGNMENT CHECK".

WIDTH, DRIVE AND HORIZONTAL LINEARITY ADJUSTMENTS

Turn width control B4 to maximum clockwise position. Adjust "horizontal drive" trimmer B5 for maximum brightness and linearity. Adjust horizontal linearity B6 for best linearity in the right half of the picture. Readjust width control B4 until picture fills the mask.

FINE TUNING DIAL CORD STRINGING

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT TYPE	RMA BASE TYPE	NOTES
V1	RF Amp.	6J6	6J6	7BF	
V2	Mixer	6AG5	6AG5	7BD	
V3	Oscillator	6J6	6J6	7BF	
V4	1st Video IF	6AG5	6AG5	7BD	
V5	2nd Video IF	6AG5	6AG5	7BD	
V6	3rd Video IF	6AG5	6AG5	7BD	
V7	Video Det.-AGC	6AL5	6AL5	6BT	
V8	Video Amp.	12AU7	12AU7	9A	
V9	Sound IF Amp.	6AU8	6AU8	7BK	
V10	Ratio Det.	6AL5	6AL5	6BT	
V11	AF Amp.	6AT6	6AT6	7BT	
V12	Audio Output	6K6GT	6K6GT	7S	
V13	Sync. Limiter-Vert. Osc.	6BF6	6BF6	7BT	
V14	Sync. Sep.	6SN7GT	6SN7GT	8BD	
V15	Vert. Amp.	6K6GT	6K6GT	7S	
V16	Hor. AFC-Hor. Osc	6SN7GT	6SN7GT	8BD	
V17	Hor. Output	6BG6G	6BG6G	5BT	
V18	Damper	6W4	6W4	4CG	
V19	HV Rect.	1B3GT	1B3GT	3C	
V20	HV Rect.	5U4G	5U4G	5T	
V21A	Picture Tube	12LP4	12LP4	12D	Used in sets 304 and 305
B	Picture Tube	10LP4	10LP4	12D	Used in sets 300 and 301

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	10	475	TCE147D *	AF2X1J261		UP13DJ		TVL-4811	▲ Decoupling
B	60	450		25B		1185			■ Filter
C	30	400							▲ Filter
D	125	50							Vert. Output Cath.
C2A	80	450	TCE148D *	AF16ZI6GBD		UP13DJ		TVL-4710	▲ Filter
B	10	400				1186			■ Vert. Output Dec.
C	30	300							▲ Filter
D	40	150							Cathode Bypass
C3	4	50		PRS150/4		BR550		TVA-1303	Stabilizing Cap.
C4	24	350		PRS350/24		BR2035A		TVA-1610	Output Decoup.
C5	390		TCC361-10	GP360M	D6-391		G2K-360		Ant. Coupling
C6	390		TCC361-10	GP360M	D6-391		G2K-360		RF Cath. Bypass
C7	360		TCC361-10	GP360M	D6-391		G2K-360		RF Fil. Bypass
C8	380		TCC381-10	GP360M	D6-391		G2K-360		RF Decoup.
C9	1		TCC010-11		D2-1				RF Coupling
C10	22		TCC22-12	CN22JNPO	D2-22		NPOK-22		RF Coupling
C11	5000		TCC502-SP	BPD-5	D6-502		81l-005	29C1	Mixer Decoup.
C12	360		TCC361-10	GP360M	D6-391		G2K-360		Mixer Fil. Byp.
C13	1		TCC010-11		D2-1				Osc. Coupling
C14	4.7		TCC4.7-11	CN4.7DN750			N750K-4.7		Osc. Feedback
C15	4.7		TCC4.7-11	CN4.7DN750			N750K-4.7		Osc. Feedback
C16	360		TCC361-10	GP360M	D6-391		G2K-360		Osc. Cath. Bypass
C17	270	500	TCM271-7	1468-00025	D6-271	5WS72S	G2K-270	1FM-325	IF Coupling
C18	1500		TCC152-SP	GP1500M	D6-152	1WSD1S	G2L-0015	1FM-215	AGC Filter
C19	1500		TCC152-SP	GP1500M	D6-152	1WSD1S	G2L-0015	1FM-215	1st V. IF Dec.
C20	5000		TCC502-SP	BPD-5	D6-502	1D5D5	81l-005	29C1	1st V. IF Fil.
C21	270	500	TCM271-7	1468-00025	D6-271	5WS72S	G2K-270	1FM-325	IF Coupling
C22	1500		TCC152-SP	GP1500M	D6-152	1WSD1S	G2L-0015	1FM-215	AGC Filter
C23	1500		TCC152-SP	GP1500M	D6-152	1WSD1S	G2L-0015	1FM-215	2nd V. IF Dec.
C24	5000		TCC502-SP	BPD-5	D6-502	1D5D5	81l-005	29C1	2nd V. IF Fil.
C25	35	300	TCC354-1	P488-25		GT2P25		TC-2	AGC Filter
C26	270	500	TCM271-7	1468-00025	D6-271	5WS72S	G2K-270	1FM-325	IF Coupling
C27	1.5		TCC1.5-8		D2-1.5		NPOK-1.5		IF Coupling
C28	30	500	TCC030-8		D2-30	5R5Q3	NPOL-30	MS-43	Fixed Trimmer
C29	5000		TCC502-SP	BPD-5	D6-502	1D5D5	81l-005	29C1	RF Bypass
C30	1500		TCC152-SP	GP1500M	D6-152	1WSD1S	G2L-0015	1FM-215	3rd V. IF Dec.
C31	5000		TCC502-SP	BPD-5	D6-502	1D5D5	81l-005	29C1	3rd V. IF Cath.
C32	5000		TCC502-SP	BPD-5	D6-502	1D5D5	81l-005	29C1	3rd V. IF Fil.
C33	270	500	TCM271-7	1468-00025	D6-271	5WS72S	G2K-270	1FM-325	IF Coupling
C34	5	500	TCC050-8	1469-000005		5R5Y9	NPOK-5	MS-55	Fixed Trimmer
C35	360		TCC361-10	GP360M	D6-391	5WS72	G2K-360	1FM-325	IF Coupling
C36	5000		TCC502-SP	BPD-5	D6-502	1D5D5	81l-005	29C1	DAGC Dec.
C37	6	500	TCC060-7	GP5K	D6-4.7	5W5V5	GP1K-5	MS-55	V. Diode Filter
C38	.05	600	TCP503-10	P688-05		PTE68S		TM-15	Video Coupling
C39	.047	600	TCP4S03-10	P688-047		PTE68S		TM-15	Video Coupling
C40	4700		TCC472-7	GP4700M	D6-472	1D5D5	G2M-0047	1FM-25	2nd V. Amp. Cath.
C41	.25	400	TCP254-4	P488-25		GT4P25		TC-2	Pic. Tube Cath.
C42	3.2		TCC3.2-7		D2-2.2				S. IF Coupling
C43	.01	600	TCPM103-10	P688-01		D6-103	PTE68I	81l-01	TM-11	S. IF Dec.
C44	.02	300	TCP203-1	P488-02			PTE48Z		TM-12	S. IF Cath.
C45	5	500	TCC050-8	1469-000005		5R5Y5	NPOK-5	MS-55	Fixed Trimmer
C46A	2000		TCC3-1	GP2000M	D6-202	1W5D2	882-2 x 003	29C5	Diode Load Cap.
B	2000			GP2000M	D6-202	1W5D2			Diode Load Cap.
C47	1500		TCC152-7	GP1500M	D6-152	1WSD1S	G2L-0015	1FM-315	De-emphasis
C48	.002	600	TCP202-10	P688-002		D6-202	PTE6D2	G2M-002	TM-22	Audio Coupling
C49	.01	600	TCP103-10	P688-01		D6-103	PTE6I	81l-01	TM-11	Audio Coupling
C50	.01	600	TCP103-10	P688-01		D6-103	PTE6I	81l-01	TM-11	Audio Coupling
C51	.0022	600	TCPM202-10	P688-0022		D6-222	PTE6D3	G2M-0022	TM-22	De-emphasis
C52	.0047	600	TCPM502-10	P688-0047		D6-472	PTE6D5	G2M-0047	TM-22	Output Plate Byp.
C53	.047	600	TCP4S03-10	P688-047			PTE6S		TM-15	Sync. Coupling
C54	100	500	TCM101-7	1468-0001		D6-101	5W5T1	GP1K-100	1FM-31	Sync. Coupling
C55	390	500	TCM391-7	1468-0004		D6-391	5W5T4	GP1K-390	1FM-34	Sync. Sep. Cath.
C56	.002	600	TCP202-10	P688-002		D6-202	PTE6D2	G2M-002	TM-22	Integrator Net.
C57	.005	600	TCP502-10	P688-005		D6-502	PTE6D5	81l-005	TM-25	Integrator Net.
C58	4700	500	TCM472-8	1487-005		D6-472	1D5D5	G2M-0047	1FM-25	Vert. Osc. Grid
C59	.05	600	TCP503-10	P688-05			PTE68S		TM-15	Vert. Discharge
C60	.23	600	TCPM254-4	684-25			GT6P25		TC-2	Vert. Sweep Coupling
C61	120	500	TCM121-7	1468-00015	D6-121	5WS71S	GP1K-120	1FM-315	Hor. Sync. Coupling
C62	120	500	TCM121-7	1468-00015	D6-121	5WS71S	GP1K-120	1FM-315	Voltage Divider

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C63	.002	600	TCP202-10	P688-002		D6-202	PTE6D2	G2M-002	TM-22	Hor. Sync. Coupling
C64	5	1500	TCM050-20							Hor. Feedback
C65	.25	400	TCP254-4	P488-25			GT4P25		TC-2	AFC Filter
C66	.03	400	TCP303-4	P488-02			PTE48Z		TM-12	AFC Filter
C67	.047	600	TCPM503-10	P688-047			PTE68S		TM-15	Hor. AFC Plate
C68	180	500	TCM181-10	1469-0003		D6-181	5R5T2	G2K-180	MS-32	Hor. Osc. Grid Cap.
C69	2200	500	TCM222-14			D6-222		G2M-0022		Hor. Discharge
C70	.25	600	TCP254-10 *	684-25				GT6P25		TC-2	Decoupling
C71	390	500	TCM391-14	1468-0004		D6-391	5W5T4	GP2K-390	1FM-34	Hor. Sweep Coupling
C72	.05	1000	TCP503-13	P1088-05			GT16S5		TR-15	Hor. Output Screen
C73	.25	200	TCP254-1	P488-25			GT2P25		TC-2	Hor. Output Cath.
C74	.1	1000	TCP104-13	1084-1			GT16P1			Damper Filter
C75	.035	600	TCP353-10	P688-033						Damper Filter
C76	.25	400	TCP254-4SP	P488-25			GT4P25		TC-2	Hor. Sweep Coupling
C77	.01	600	TCP103-10	P488-01		D6-103	PTE4SI	81l-01	TM-11	Line Filter
C78	.01	400	TCP103-10	P488-01		D6-103	PTE4SI	81l-01	TM-11	Line Filter
C79	360		TCC361-10	GP360M		D6-391	5W5T4	GP2K-350	1FM-34	RF Bypass

* Early production models use 4 electrolytic capacitors instead of two as shown. The exact transposition is listed below:

MFGR' S Part No.	VALUE	REPLACES
TCE113DA	80/450V	C2A
	10/475V	C1A
TCE115DA	30/475V	C7O
	30/400V	C1C
	30/300V	C2C
TCE116DA	40/450V	C1B
	10/400V	C2B
TCE117DA	40/450V	C1B
	40/150V	C2D
	130/50V	C1D

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	11.5KΩ	½	TCV524D		R7TV-62	SBB-641	Contrast control-front
B	500KΩ	½					Brightness control-rear
R2A	500K	½	TCV526D	Q13-133	AG-60-Z	B-60-S	Volume control
B	Switch		Not Req.	76-1	SW-B	Not Req.	Attach to R2A per instructions
R3A	1.5 Meg.	½		Concentrikit			Vert. hold control-front
B	50KΩ	½	TCV523-D	Bil-138 *	R7TV-53	SBB-640	Horiz. hold control-rear
C	Shaft End			E-187 *			Attach per instr. in "Concentrikit".
R4A	5000Ω	½	TVC503-1D	Q11-114	AM-19-S	AN-10	Vert. linearity control
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Attach to R4A per instructions
R5A	2.5 Meg.	½	TVC504-1D	Q11-239	AM-84-S	AN-83	Height control
B	Shaft		Not Req.	RQ	FKS-1/4	AK-1	Attach to R5A per instructions
R6	2250Ω	4	TVC506-1D		R7TV-9 †	SVS-926	Focus control-Wire Wound

* Additional parts to be used with "Concentrikit".
† File slot in shaft to duplicate original.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES: ALL RESISTORS ARE ± 20% UNLESS OTHERWISE STATED
R7	3300 10%	½	TRC331-2		RF Amp. Cathode
R8	56Ω 10%	½	TRC560-2		RF Amp. Cathode
R9	1000Ω	½	TRC102-1	BTS-1000	RF Amp. Decoupling
R10	4700Ω 5%	½	TRC472-3	BTS-4700-5%	RF Coil Shunt
R11	1 Meg.	½	TRC105-1	BTS-1 Meg.	Mixer Grid
R12	1000Ω	½	TRC102-1	BTS-1000	Mixer Decoupling
R13	470	½	TRC470-1		Oscillator Cathode
R14	27KΩ	½	TRC273-1	BTS-27K	Oscillator Grid
R15	27KΩ	½	TRC273-1	BTS-27K	Oscillator Grid
R16	1000Ω	½	TRC102-1	BTS-1000	1st Video Plate Load
R17	3900Ω 10%	½	TRC392-2	BTS-3900	1st Video IF Grid
R18	39Ω 10%	½	TRC390-2		1st Video IF Cathode
R19	1000Ω	½	TRC102-1	BTS-1000	1st Video IF Decoupling
R20	330Ω	½	TRC331-1		AGC Network
R21	330Ω	½	TRC331-1		AGC Network
R22	39Ω 10%	½	TRC390-2		2nd Video IF Cathode
R23	1000Ω	½	TRC102-1	BTS-1000	2nd Video IF Decoupling
R24	10KΩ 10%	½	TRC103-2		3rd Video IF Coil Shunt
R25	12KΩ	½			Trap Coil Shunt-See Note 1
R26	100Ω	½	TRC101-1		3rd Video IF Cathode
R27	1000Ω	½	TRC102-1	BTS-1000	3rd Video IF Decoupling
R28	560KΩ	½	TRC564-1	BTS-560K	AGC Network
R29	120KΩ	½	TRC124-1	BTS-120K	AGC Diode Load
R30	1500Ω	½	TRC152-1	BTS-1500L	Voltage Divider
R31	8200Ω 10%	½	TRC882-5	BTS-8200	Video Detector Diode Load
R32	1 Meg.	½	TRC105-1	BTS-1 Meg.	1st Video Amp. Grid
R33	3300Ω 10%	1	TRC332-5	BTA-3300	1st Video Amp. Plate Load
R34	1 Meg.	½	TRC105-1	BTS-1 Meg.	2nd Video Amp. Grid
R35	470	½	TRC470-1	BW-1-47	2nd Video Amp. Cathode
R36	3300Ω 10%	1	TRC332-5	BTA-3300	2nd Video Amp. Plate Load
R37	1000Ω 10%	½	TRC102-2	BTS-1000	2nd Video Amp. Plate Load
R38	100KΩ	½	TRC104-1	BTS-100K	Voltage Divider
R39	100Ω	½	TRC101-1		Sound IF Cathode
R40	1000Ω	½	TRC102-1	BTS-1000	Sound IF Decoupling
R41	220Ω	½	TRC221-1		Balancing
R42	220Ω	½	TRC221-1		Balancing
R43	5.1Ω	½	TRC51A-1		Ratio Detector Filament Dropping
R44	15KΩ 10%	½	TRC153-2	BTS-15K	Ratio Detector Diode Load

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R45	15KΩ 10%	½	TRC153-2	BTS-15K	Ratio Detector Diode Load
R46	47KΩ	½	TRC473-1	BTS-47K	De-emphasis
R47	8.3 Meg.10%	½		BTS-8.3 Meg.	AF Amp. Grid-See Note 2
R48	330KΩ	½	TRC334-1	BTS-330K	AF Amp. Plate Load
R49	470KΩ	½	TRC474-1		Output Grid
R50	1000Ω	1	TRC102-5	BTA-1000	Output Decoupling
R51	1 Meg.	½	TRC105-1		Sync. Sep. Grid
R52	15KΩ	1	TRC153-4	BTA-15K	Sync. Sep. Plate Load
R53	3.9 Meg.	½	TRC395-1	BTS-3.9 Meg.	Sync. Sep. Grid
R54	6800Ω	1	TRC682-1	BTS-6800	Sync. Sep. Cathode
R55	22KΩ	½	TRC223-1	BTS-22K	Integration
R56	8200Ω	½	TRC822-1	BTS-8200	Integration
R57	1 Meg. 10%	½	TRC105-2	BTS-1 Meg.	Vert. Osc. Grid
R58	220KΩ	½	TRC224-1	BTS-220K	Vert. Osc. Plate Load
R59	56KΩ	½	TRC563-1	BTS-56K	Decoupling
R60	3300Ω	½	TRC332-1	BTS-3300	Vert. Peaking
R61	2.2 Meg.	½	TRC225-1	BTS-2.2 Meg.	Vert. Output Grid
R62	1500Ω	½	TRC152-1	BTS-1500	Vert. Output Cathode
R63	1000Ω	½	TRC102-1	BTS-1000	Vert. Output Decoupling
R64	560KΩ 5%	½	TRC564-3	BTS-560K-5%	Horiz. AFC Grid
R65	180KΩ 10%	½	TRC184-2	BTS-180K	Horiz. AFC Cathode
R66	100KΩ 5%	1	TRC104-8	BTA-100K-5%	Horiz. AFC Cathode
R67	8200Ω 10%	½	TRC822-5	BTS-8200	Horiz. AFC Filter Network
R68	3.3 Meg. 5%	1	TRC335-8	BTA-3.3 Meg. 5%	Voltage Divider
R69	30KΩ 10%	½	TRC303-12		Voltage Divider-Temperature Compensation
R70	120KΩ 10%	½	TRC124-5	BTS-120K	Voltage Divider
R71	270KΩ 10%	1	TRC274-5	BTA-270K	Voltage Divider
R72	150KΩ 10%	½	TRC154-2	BTS-150K	Horiz. AFC Feedback Network
R73	560KΩ	½	TRC564-1	BTS-560K	Horiz. AFC Feedback
R74	100KΩ 1%	½	TRC104-SP		Horiz. Osc. Grid-Temperature Compensation
R75	180KΩ 10%	1	TRC184-5	BTA-180K	Horiz. Osc. Plate Load
R76	10KΩ 10%	½	TRC103-2	BTS-10K	Horiz. Osc. Transformer Shunt
R77	47Ω	½	TRC470-1		Parasitic Suppressor
R78	1 Meg.	½	TRC105-1	BTS-1 Meg.	Horiz. Output Grid
R79	82Ω	½	TRC820-4	BW-1-82	Horiz. Output Cathode
R80	6800Ω 10%	1	TRC682-5	BTA-6800	Horiz. Output Screen Dropping
R81	10KΩ	½	TRC103-1	BTS-10K	Decoupling
R82	3.3Ω	2	TRC33A-1		HV Rect. Fil.
R83	33Ω 10%	1	TRC330-5	BW-1-33	Bias Network
R84	82Ω 10%	2	TRC820-8	BW-2-82	Bias Network-Wire Wound
R85A	650Ω	10.1			Bias Network-Wire Wound
B	1125Ω	9.8	TRP17DA		Filter-Wire Wound
C	8200Ω	2.2			Filter-Wire Wound
R86	220Ω	½	TRC221-1	BW-1-220	Voltage Divider
R87	330Ω	2	TRC331-7	BW-2-330	Focus Coil Shunt

Note 1. Not used in all models.
Note 2. Some models use 10 Meg. in this application. IRC replacement BTS-10 Meg.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC ② 1.8A	700VCT .240ADC	5VAC ② 3A	6.3VAC ② 1.8A	TTR188-D	P-8159 P-5014 ①	P-7067	TP-350
				SEC. 4 6.3VAC ② 7A				

① Mount under chassis and use for SEC. #3

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	NOTES
T2	145Ω	1360Ω	TTR161-2D	A-8111	A-3000	TBO-1	Vert. Block Osc. Trans
T3	420Ω	10.5Ω	TTR181-D	A-8128	HVO-1	TFB-3	Hor. Output Trans.
	Tap ② 170Ω	Tap ② 6Ω					
		SEC. 2 0Ω					
T4	610Ω	9Ω	TTR153-4D	A-8112	A-3036	TSO-5 ②	Vert. Output Trans.
T5A	14Ω		TTR159-D	DY-7	MD-3		Hor. Deflection Coil
B	63Ω						Vert. Deflection Coil
T6	286Ω		TLF545-DA		MF-1		Focus Coil

② Drill one new mounting hole.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TELE-TONE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.	INSTALLATION NOTES
T7	6500Ω	3.5Ω	465Ω	.4Ω	TTR192-D	A-8114	A-2931	RO-13	

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PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	TELE-TONE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	3.5Ω	TSP463-D		46A1	
	CONE DIA.	V. C. DIA.				
SP2	3 7/8" x 5 7/8"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∽)	TELE-TONE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1.	.240ADC	37Ω	1 Henry	TTR106-2D	C-2326 ②	C-2996 ②	TR-3300②	② Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TELE-TONE PART No.	MEISSNER PART No.	
L2	RF Choke	3Ω				
L3	RF Coil	0Ω		TLF143D		Channel 6
L4	Mixer Grid	0Ω		TLF143D		Channel 6
L5	RF Choke	1.5Ω		TLF146D		Wound on 1.5 Meg. resistor
L6	Osc. Coil	0Ω		TLF120-1		Channel 2
L7	Osc. Coil	0Ω		TLF120-2		Channel 3
L8	Osc. Coil	0Ω		TLF120-3		Channel 4
L9	Osc. Coil	0Ω		TLF120-4		Channel 5
L10	Osc. Coil	0Ω		TLF120-5		Channel 6
L11	Osc. Coil	0Ω		TLF120-6		Channel 7
L12	Osc. Coil	0Ω		TLF120-7		Channel 8
L13	Osc. Coil	0Ω		TLF120-8		Channel 9
L14	Osc. Coil	0Ω		TLF120-9		Channel 10
L15	Osc. Coil	0Ω		TLF120-10		Channel 11
L16	Osc. Coil	0Ω		TLF120-10		Channel 12
L17	Osc. Coil	0Ω		TLF120-10		Channel 13
L18	1st Video IF	.1Ω		TLF551D		
L19	2nd Video IF	.1Ω		TLF517D		
L20	Grid Choke	1.5Ω		TLF146D		Wound on 1.5 Meg resistor
L21	RF Choke	1.5Ω		TLF146D		Wound on 1.5 Meg resistor
L22	3rd Video IF	.1Ω		TLF148D		
L23	Sound Trap	0Ω		TTR158		
L24	RF Choke	1.5Ω		TLF146D		Wound on 1.5 Meg. resistor
L25	4th Video IF	.1Ω		TLF149D		Center tapped
L26	Peaking	5Ω		TLF503		Black dot, 36 microhenries
L27	Peaking	5.5Ω		TLF502	19-1921 *	Blue dot, wound on 22KΩ resistor, 120 microhenries
L28	Peaking	2.2Ω		TLF519D	19-1920	100 microhenries
L29	Peaking	2.5Ω		TLF503		Black dot, 36 microhenries
L30	Peaking	5.5Ω		TLF502	19-1921 *	Blue dot, wound on 22KΩ resistor, 120 microhenries
L31	Sound IF	1.5Ω		TLF114D		
L32	Ratio Det. Trans.	6.8Ω	.5Ω	TLF142D		
L33	Horiz. Osc.	125Ω		TTR157		Tap at 38Ω
L34	Horiz. Lin.	40Ω		TLF506		
L35	Horiz. Size	.3Ω		TLF505D		

* Parallel with 22KΩ resistor.

MISCELLANEOUS

ITEM No.	PART NAME	TELE-TONE PART No.	NOTES
M1A	RF Tuner		12 coil osc. section
B	RF Tuner		7 coil osc. section
M2	Fuse	TFU-1	.25 A 250V
M3A	Ion Trap	TLF-546	12 inch picture tube
B	Ion Trap	TLF500-1D	10 inch picture tube
	Trimmer	TAS501D	3 section Horiz. range 10-160MMF, Horiz. freq. 40-370MMF, Horiz. drive 40-370MMF
	Safety Glass	TGL-116D	Models TV305, 304
	Safety Glass	TGL-107D	Models TV300, 301
	Cabinet	TCB-271D	Model TV305
	Cabinet	TCB-275D	Model TV304
	Cabinet	TCB-255DM	Model TV301
	Cabinet	TCB-255DB	Model TV300
	Antenna	TBP-539D	Built-in models TV305, 304
	Antenna	TBP-541D	Built-in models TV300, 301
	Knob	TKN-117D	Channel selector, models TV305, 301
	Knob	TKN-108-1	Channel selector, model TV300
	Knob	TKN-117	Channel selector, model TV304
	Knob	TKN-114D	Outside, models TV305, 301
	Knob	TKN-114	Outside, model TV304
	Knob	TKN-100-1	Outside, model TV300
	Knob	TKN-115D	Inside, models TV305, 301
	Knob	TKN-115	Inside, model TV304
	Knob	TKN-103-1	Inside, large shaft model TV300
	Knob	TKN-101-1	Inside, small shaft model TV300
	Knob	TKN-116D	Dual models TV305, 301
	Knob	TKN-116	Dual model TV304

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PHOTOFACT* Folder

TRANSVISION CHASSIS

MODEL "A"

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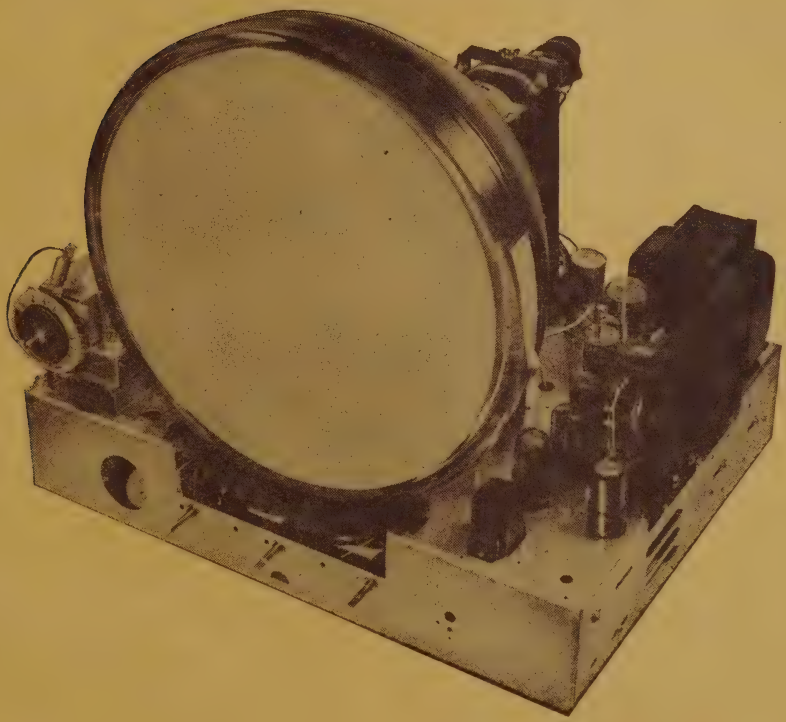

TRANSVISION CHASSIS

MODEL "A"

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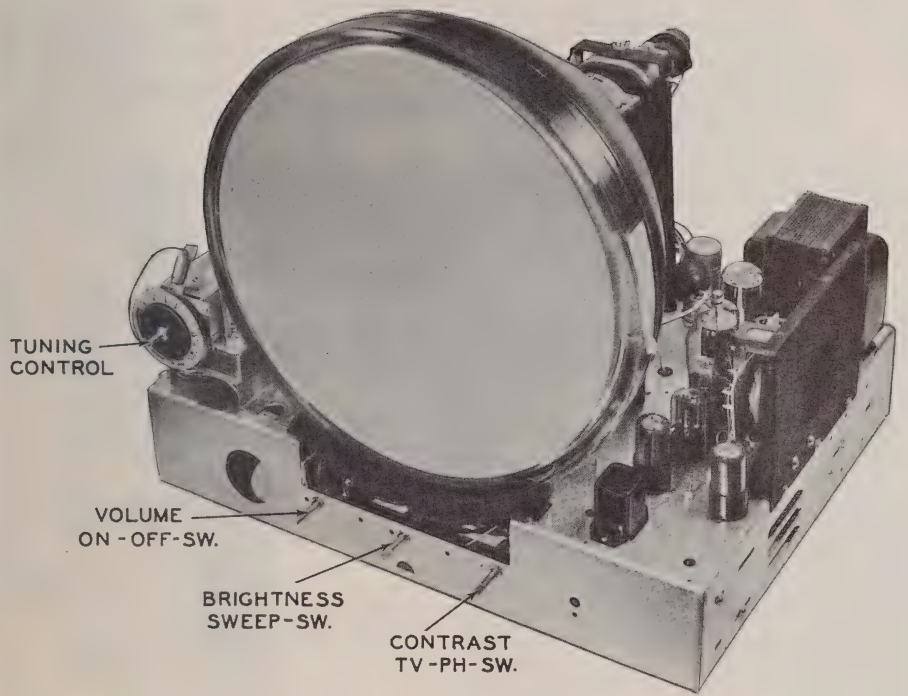

TRANSVISION CHASSIS MODEL "A"

TRADE NAME	Transvision, Chassis Model "A"
MANUFACTURER	Transvision Inc., New Rochelle, New York
TYPE SET	TV-FM Receiver
TUBES	Twenty-Four
POWER SUPPLY	110-120 Volts AC-60 Cycle
RATING	2.5 Amp. at 117 Volts AC
TUNING RANGE—	44 thru 216MC (Continuous Tuning)

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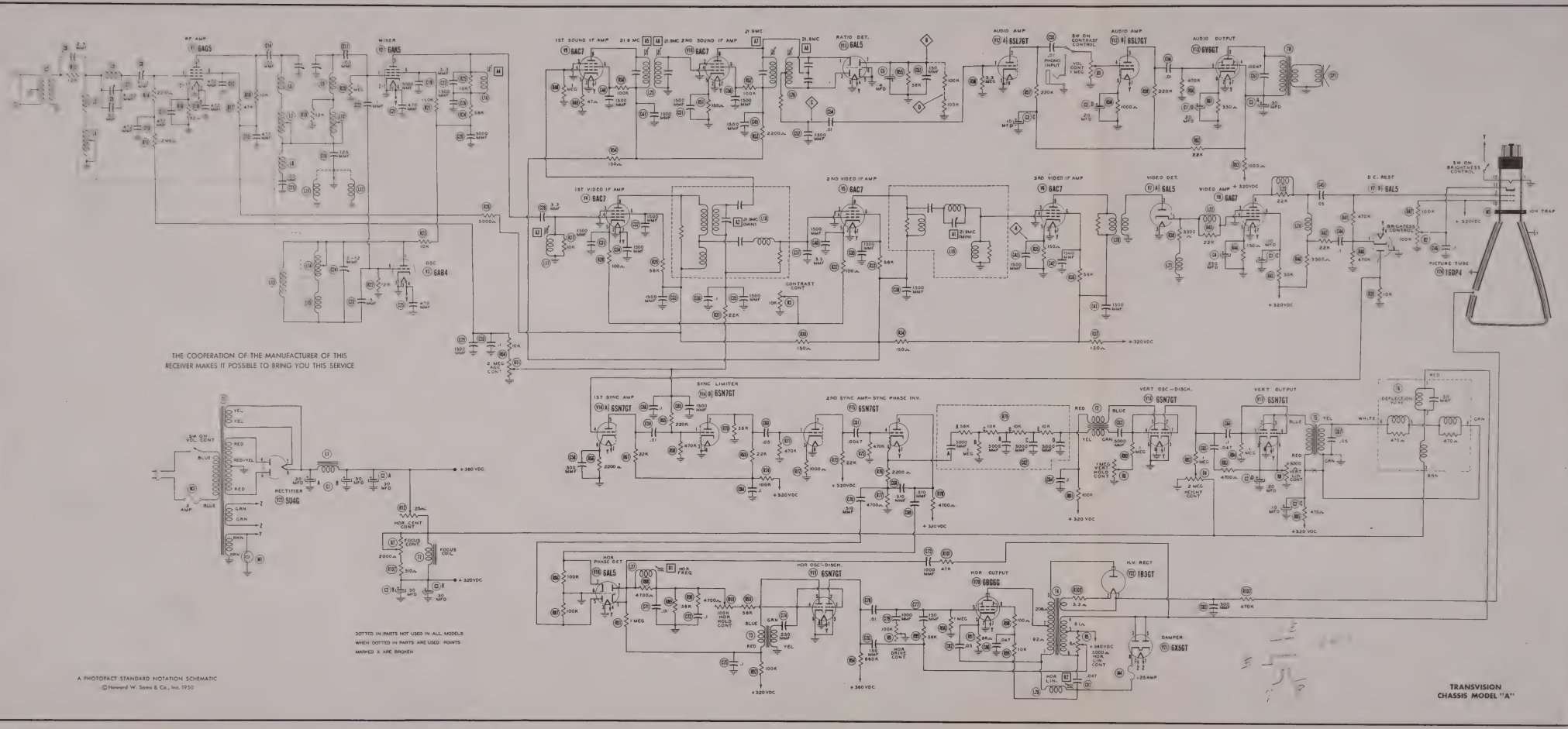
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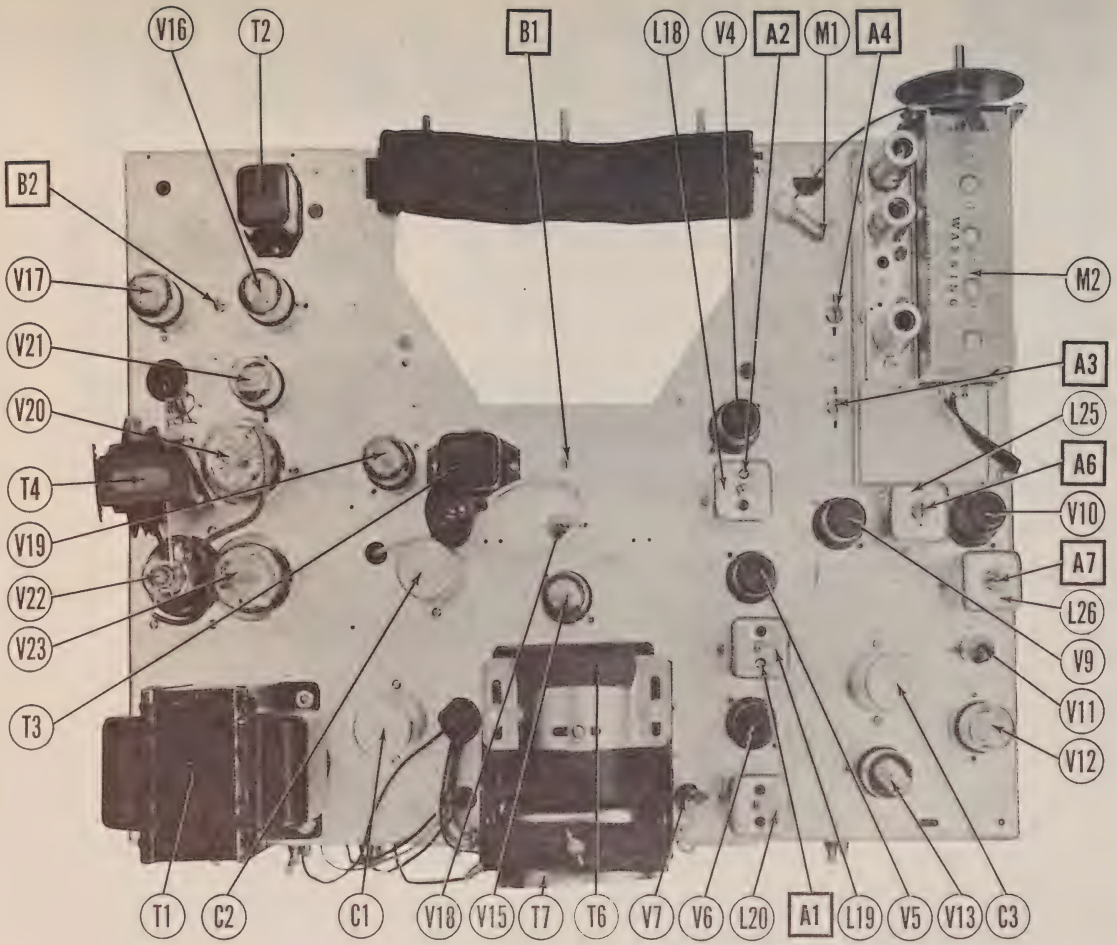
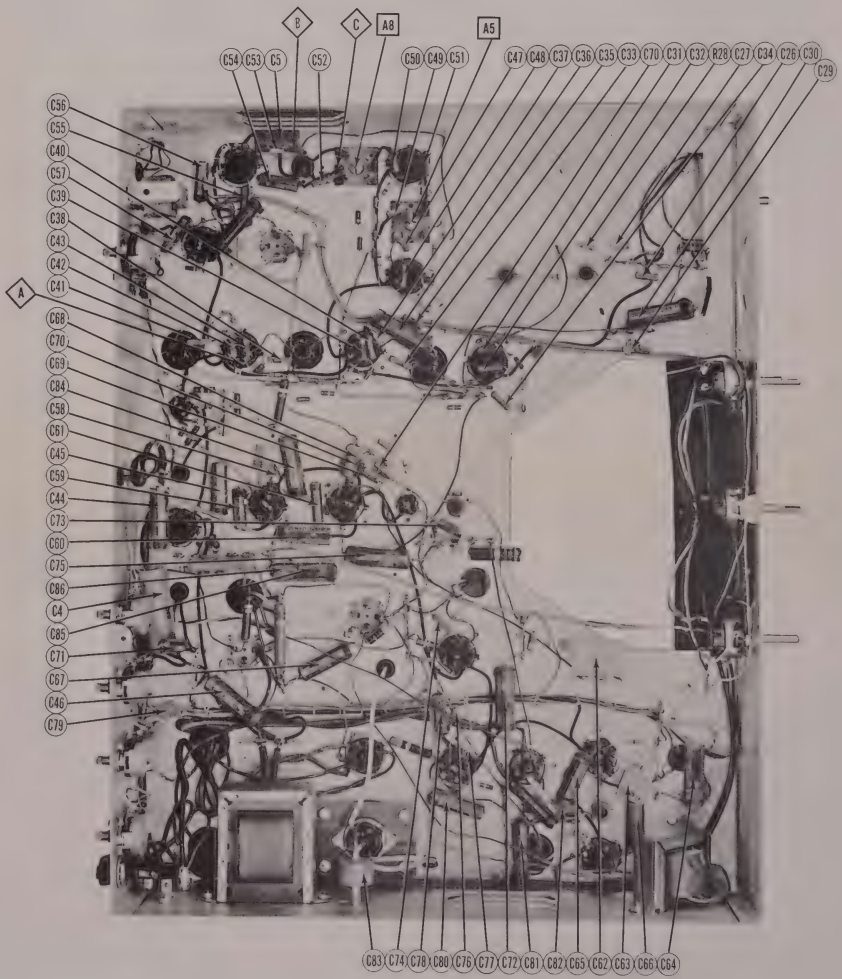
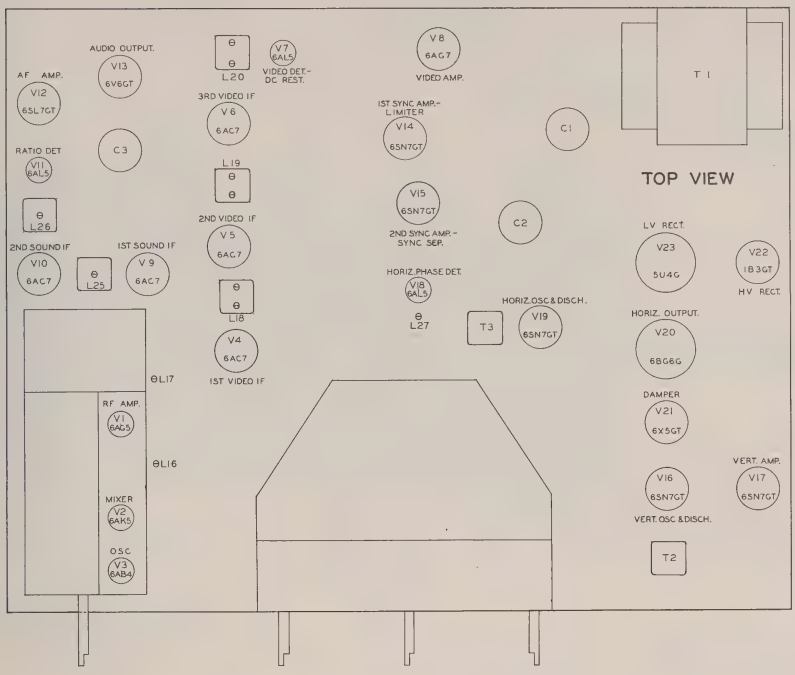


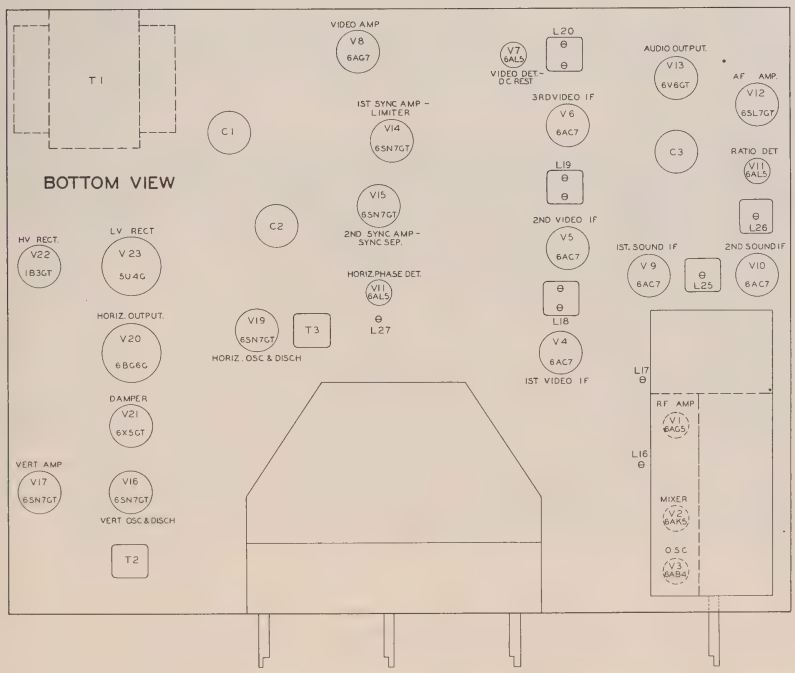
CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION

TRANSVISION
CHASSIS MODEL "A"





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

If the picture tube is to be removed while aligning the receiver the high voltage lead should be securely taped and dressed away from the chassis.

VIDEO IF ALIGNMENT

Remove the local oscillator tube (V3) to prevent erroneous indications.
Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	Not used	21.9MC (Unmod.)	Any	Use VTVM. DC Probe to Point (A). Low side to chassis.	A1, A2,	Adjust for minimum deflection.
2.	Direct	"	24MC (10MC SWP)	21.9MC 22.5MC 26.4MC	"	Vert. Amp. to Point (A). Low side to chassis.	A3, A4	Adjust alternately for maximum amplitude and symmetrical shape of response curve similar to figure 1. The 26.4MC marker should be at 50% of response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (±1%) resistors in series from Point B to chassis. The junction of these two resistors is alignment Point (C) as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
3.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	21.9MC (Unmod.)	Any	DC Probe to Point (B). Common to chassis.	A5, A6, A7	Adjust for maximum deflection.
4.	Direct	"	"	"	DC Probe to Point (C). Common to Point (D).	A8	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
3.	Direct	High side to ungrounded tube shield floating over mixer tube (V2). Low side to chassis.	21.9MC (450KC Sweep)	21.9MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A5, A6, A7	Disconnect stabilizer capacitor C5. Adjust for maximum amplitude and symmetry as per figure 2.
4.	Direct	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A8	Reconnect capacitor C5. Adjust A8 to place 21.9MC at center of crossover lines as per figure 3. Slightly retouch A7 for maximum amplitude and straightness of crossover lines.

THE RF TUNER PORTION OF THIS RECEIVER HAS BEEN PRE-ALIGNED AT THE FACTORY AND IS VERY STABLE AND SHOULD NOT NORMALLY REQUIRE ALIGNMENT IN THE FIELD.

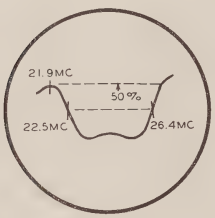
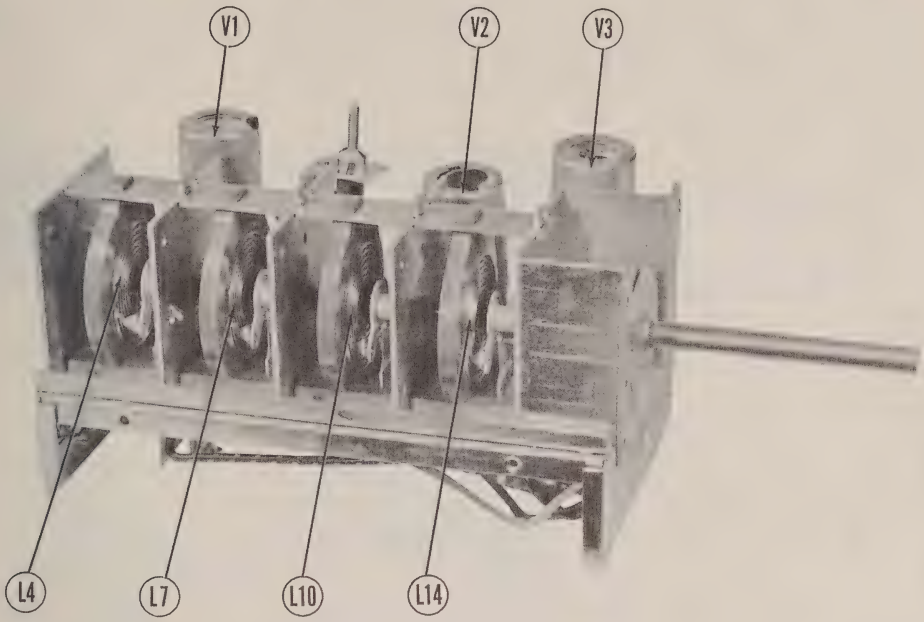


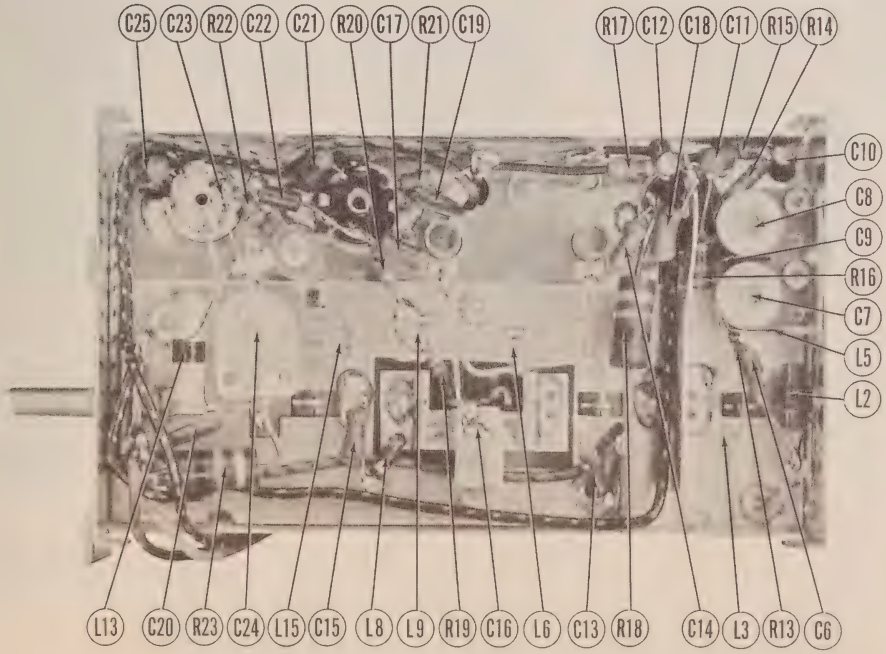
FIG. 1

FIG. 2

FIG. 3



RF TUNER – TOP VIEW



RF TUNER – BOTTOM VIEW

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	-.2VDC -.1VDC	.8VDC	6.3VAC	0V.	135VDC	95VDC	.8VDC		
V 2	6AK5	-1.6VDC	0V.	0V.	6.3VAC	100VDC	60VDC	0V.		
V 3	6AB4	130VDC	0V.	0V.	6.3VAC	0V.	§-4.3VDC	0V.		
V 4	6AC7	0V.	0V.	0V.	0V.	11VDC	280VDC	6.3VAC	285VDC	
V 5	6AC7	0V.	0V.	0V.	-.2VDC	11VDC	285VDC	6.3VAC	290VDC	
V 6	6AC7	0V.	0V.	0V.	0V.	2.2VDC	170VDC	6.3VAC	295VDC	
V 7	6AL5	.7VDC	0V.	0V.	6.3VAC	.3VDC	0V.	0V.		
V 8	6AG7	0V.	0V.	0V.	.3VDC	3VDC	170VDC	6.3VAC	250VDC	
V 9	6AC7	0V.	0V.	0V.	-.2VDC	.4VDC	95VDC	6.3VAC	290VDC	
V 10	6AC7	0V.	0V.	0V.	0V.	1.3VDC	100VDC	6.3VAC	295VDC	
V 11	6AL5	-.4VDC	-.4VDC	0V.	6.3VAC	0V.	0V.	-.5VDC		
V 12	6SL7GT	-.5VDC	75VDC	0V.	0V.	75VDC	.7VDC	6.3VAC	0V.	
V 13	6V6GT	0V.	0V.	250VDC	260VDC	0V.	0V.	6.3VAC	15VDC	
V 14	6SN7GT	-.5VDC	22VDC	0V.	0V.	42VDC	1.7VDC	6.3VAC	0V.	
V 15	6SN7GT	0V.	185VDC	6VDC	0V.	290VDC	14VDC	6.3VAC	0V.	
V 16	6SN7GT	-22VDC -20VDC	5VDC -.6VDC	0V.	-22VDC -20VDC	75VDC	0V.	6.3VAC	0V.	
V 17	6SN7GT	0V.	265VDC	.4VDC 15VDC	0V.	265VDC	.4VDC 15VDC	6.3VAC	0V.	
V 18	6AL5	-1.5VDC	-1.5VDC	0V.	6.3VAC	5.3VDC	0V.	-22VDC		
V 19	6SN7GT	-27VDC -19VDC	48VDC	0V.	-27VDC -19VDC	180VDC	0V.	6.3VAC	0V.	
V 20	6BG6G	0V.	0V.	10VDC	350VDC	-3VDC 0V.	350VDC	6.3VAC	260VDC	TOP CAP *
V 21	6X5GT	0V.	¶	360VDC	0V.	360VDC	0V.	¶	410VDC	
V 22	1B3GT	* DO NOT MEASURE.								
V 23	5U4G	0V.	400VDC	0V.	400VAC	0V.	400VAC	0V.	400VDC	
V 24	16DP4	0V.	.3VDC	PIN 10 320VDC	PIN 11 160VDC	PIN 12 6.3VAC				

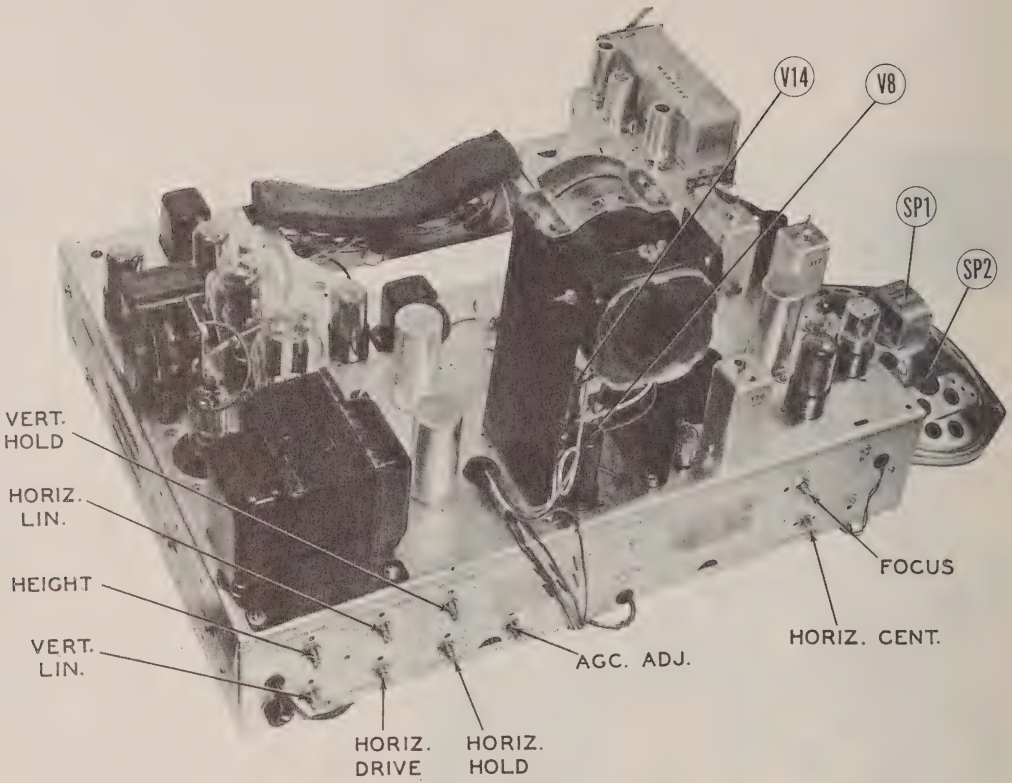
FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
¶ 6.3VAC MEASURED ACROSS FILAMENTS.
* DO NOT MEASURE.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AG5	1.8 Meg. 3.2 Meg.	82Ω	.1Ω	0Ω	†16KΩ	†52KΩ	82Ω		
V 2	6AK5	1 Meg.	0Ω.	0Ω.	.1Ω	†62KΩ	†156KΩ	0Ω		
V 3	6AB4	†16KΩ	Inf.	0Ω	.1Ω	Inf.	12KΩ	0Ω		
V 4	6AC7	0Ω	0Ω	0Ω	.1Ω	10KΩ	†56KΩ	.1Ω	†850Ω	
V 5	6AC7	0Ω	0Ω	0Ω	400KΩ	10KΩ	†56KΩ	.1Ω	†700Ω	
V 6	6AC7	0Ω	0Ω	0Ω	.1Ω	150Ω	†56KΩ	.1Ω	†550Ω	
V 7	6AL5	470KΩ	.2Ω	0Ω	.1Ω	3.3KΩ	0Ω	10KΩ		
V 8	6AG7	0Ω	0Ω	0Ω	3.3KΩ	150Ω	†50KΩ	.1Ω	†3.9KΩ	
V 9	6AC7	0Ω	0Ω	0Ω	1 Meg.	47Ω	†100KΩ	.1Ω	†850Ω	
V 10	6AC7	0Ω	0Ω	0Ω	.1Ω	150Ω	†103KΩ	.1Ω	†3KΩ	
V 11	6AL5	Inf.	Inf.	0Ω	.1Ω	0Ω	0Ω	56KΩ		
V 12	6SL7GT	3.3 Meg.	†245KΩ	0Ω	85Ω	†245KΩ	1000Ω	.1Ω	0Ω	
V 13	6V6GT	0Ω	0Ω	†1.7KΩ	†1.4KΩ	470KΩ	Inf.	.1Ω	330Ω	
V 14	6SN7GT	380KΩ	†50KΩ	0Ω	10KΩ	†80KΩ	2.2KΩ	.1Ω	0Ω	
V 15	6SN7GT	470KΩ	†22KΩ	1000Ω	470KΩ	†5KΩ	7KΩ	.1Ω	0Ω	
V 16	6SN7GT	1 Meg. 2 Meg.	† 1 Meg. †1.6 Meg.	0Ω	1 Meg. 2 Meg.	†100KΩ	0Ω	.1Ω	0Ω	
V 17	6SN7GT	1 Meg.	†2.1KΩ	5Ω 5KΩ	1 Meg.	†2.1KΩ	5Ω 5KΩ	.1Ω	0Ω	
V 18	6AL5	56KΩ	56KΩ	0Ω	.1Ω	100KΩ	0Ω	100KΩ		
V 19	6SN7GT	115KΩ 2.5KΩ	†680KΩ	0Ω	115KΩ 215KΩ	†100KΩ	0Ω	.1Ω	0Ω	
V 20	6BG6G	Inf.	0Ω	68Ω	†100Ω	1 Meg.	†56KΩ	.1Ω	#10KΩ	TOP CAP #130Ω
V 21	6X5GT	Inf.	Inf.	†100Ω	Inf.	†100Ω	Inf.	Inf.	Inf.	
V 22	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP #340Ω
V 23	5U4G	Inf.	35KΩ	Inf.	25Ω	Inf.	25Ω	Inf.	35KΩ	
V 24	16DP4	0Ω	950KΩ	PIN 10 †400Ω	PIN 11 60KΩ	PIN 12 .1Ω				

FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
† MEASURED FROM PIN 8 OF V23.
# MEASURED FROM PIN 8 OF V21.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



CHASSIS-REAR VIEW

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

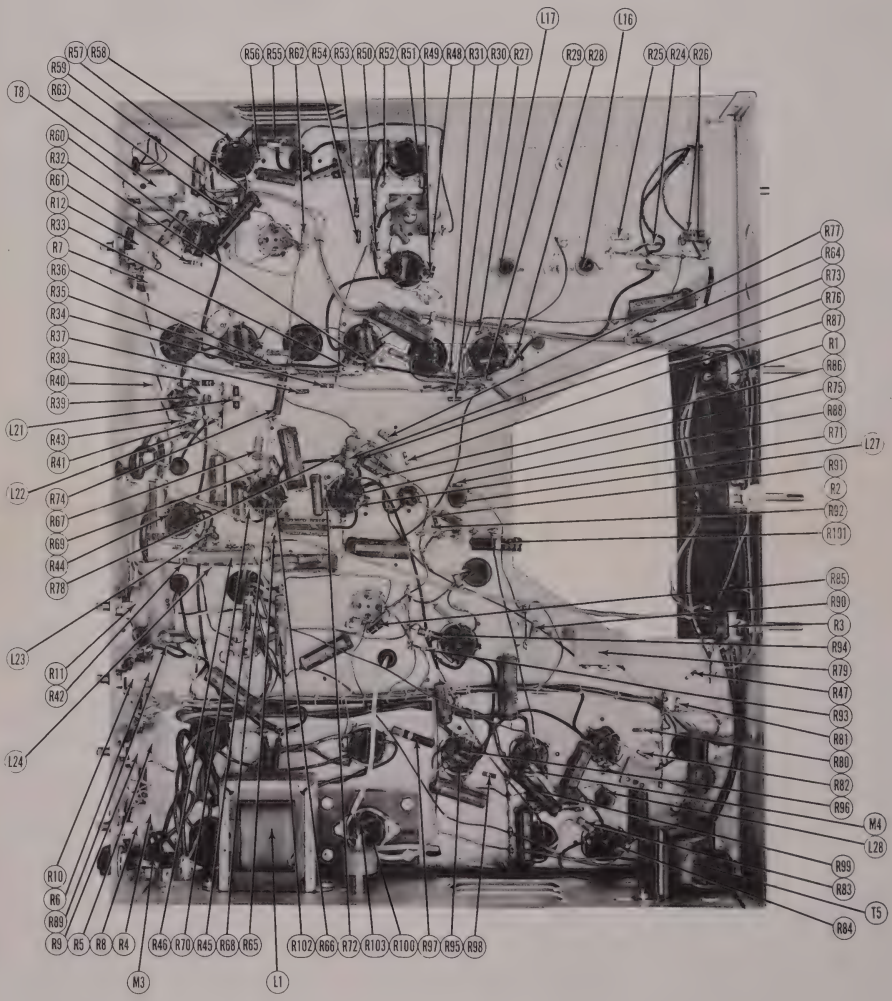
Turn the horizontal hold control to the mid-position of its range. Adjust the horizontal frequency slug (B1) over the center of its range where the picture synchronizes horizontally.

Turn the horizontal drive control clockwise as far as possible with out crowding the right side of the picture. If the set has a width control, adjust until the picture fills the mask horizontally.

Adjust the horizontal linearity control for best linearity of the left side of picture. Adjust the horizontal linearity slug (B2) for best linearity of right side of picture. A slight readjustment of of the horizontal drive control may be necessary for optimum results.

AGC ADJUSTMENT

Turn the contrast control to the mid-position of its range and adjust the AGC adjustment for best picture contrast.



CHASSIS BOTTOM VIEW- RESISTOR AND INDUCTOR IDENTIFICATION

TRANSVISION
CHASSIS MODEL "A"

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TRANSVISION PART No.	STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.		6AG5	7BD	
V2	Mixer		6AK5	7BD	
V3	Oscillator		6AB4	6AB4	
V4	1st Video IF		6AC7	8N	
V5	2nd Video IF		6AC7	8N	
V6	3rd Video IF		6AC7	8N	
V7	Video Det., DC Reat.		6AL5	6BT	
V8	Video Amp.		6AC7	8Y	
V9	1st Sound IF		6AC7	8N	
V10	2nd Sound IF		6AC7	8N	
V11	Ratio Det		6AL5	6BT	
V12	Audio Amp.		6SL7GT	8BD	
V13	Audio Output		6V6GT	7AC	
V14	1st Sync. Amp. - Limiter		6SN7GT	8BD	
V15	Sync. Phase Inv.		6SN7GT	8BD	
V16	Vert. Osc. & Disch		6SN7GT	8BD	
V17	Vert. Amp.		6SN7GT	8BD	
V18	Horiz. Phase Det.		6AL5	6BT	
V19	Hor Osc.		6SN7GT	8BD	
V20	Hor Output		6BQ6G	5UT	
V21	Damper		6X5GT	6S	
V22	HV Rect		1B3GT	3C	
V23	Reset		5U4G	5T	
V24	Picture Tube	Optional			Replace with original type.

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	TRANSVISION PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	475	90	AFB8622A		UP2S350	TVL-3840	▲ Filter	
B	30	475					TVA-1205	▲ Filter	
C	10	475						▲ V. Amp. Screen	
D	20	25						Output Cathode	
C1A	30	475	90	AFB8622A		UPT2S150T	TVL-3840	▲ Filter	
B	30	475					TVA-1205	▲ Filter	
C	10	475						▲ Vert. Output Der.	
D	20	25						Vert. Output Cath.	
C3A	30	475	90	AFB8622A		UP2S150T	TVL-3840	▲ Decoupling	
B	30	475					TVA-1205	▲ Filter	
C	10	475						▲ Decoupling	
D	20	25						AF Amp. Cath.	
C4	250	6	526	PRS8/250		BHR5025		V. Amp. Cath.	TVA-1102
C5	4	50	230	PRS150/4		BR550		Stabilizing Cap.	TVA-1303
C6	2.5							RF Coupling	
C7	8-50						557-N750-B-50	Variable Trimmer	
C8	3-12						557NPO-3-12	Variable Trimmer	
C9	5			S130KNPO	TCZ-30		NPO1-3F	Fixed Trimmer	
C10	470			GP470M	D6-471		GP2K-470	AGC Filter	
C11	470			GP470M	D6-471		GP2K-470	RF Cath. Byp.	
C12	470			GP470M	D6-471		GP2K-470	RF Screen	
C13	470			GP470M	D6-471		GP2K-470	RF Bypass	
C14	100			GP100M	D6-101		GP2K-100	RF Coupling	
C15	100			GP100M	D6-101		GP1K-100	Fixed Trimmer	
C16	125							Fixed Trimmer	
C17	100			GP100M	D6-101		GP1K-100	RF Coupling	
C18	470			GP470M	D6-471		GP2K-470	B+ Fil. Bypass	
C19	5000			BPD-005	DD-502		811-005	Mixer Screen Byp.	29C1
C20	5000			BPD-005	DD-502		811-005	RF Bypass	29C1
C21	470			GP470M	D6-471		GP2K-470	Mixer Fil. Byp.	
C22	?							Osc. Coupling	
C23	5			S15DNPO	TCZ-4.7		NPOK-5	Osc. Grid Cap.	
C24	2-12						TSZA-N500-3-12	Variable Trimmer	
C25	470			GP470M	D6-471		GP2K-470	Osc. Fil. Bypass	
C26	1500			GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	Mixer Plate Dec
C27	3.3			S13.3DNPO	TCZ-3.3		NPOK-3.3	Fixed Trimmer	
C28	3.3			S13.3DNPO	TCZ-3.3		NPOK-3.3	IF Coupling	
C29	1500			GP1500M	D6-152	1W5D15	GP2L-0015	AGC Filter	
C30	.1	600		P688-1	DF-104	PTE5P1		AGC Filter *	
C31	1500		76	GP1500M	D6-152	1W5D15	GP2L-0068	1FM-215	1st V. IF Cath.
C32	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	1st V. IF Screen
C33	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	RF Bypass
C34	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	1st V. IF Fil. *
C35	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	AGC Filter
C36	.1	600		P688-1	DF-104	PTE5P1		TM-1	AGC Filter *
C37	3.3		70	S13.3DNPO	TCZ-3.3		NPOK-3.3	Fixed Trimmer	
C38	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	2nd V. IF Dec.
C39	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	2nd V. IF Screen
C40	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	2nd V. IF Cath.
C41	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	3rd V. IF Dec.
C42	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	3rd V. IF Screen
C43	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	3rd V. IF Cath.
C44	.1	600	80	P688-1	DF-104	PTE5P1		TM-1	Video Coupling
C45	.05	600	74	P688-05	DF-503	PTE5S		TM-15	Video Coupling
C46	.1	600	80	P688-1	DF-104	PTE5P1		TM-1	Pic. Tube Cath
C47	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	Decoupling
C48	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	1st S. IF Screen
C49	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	2nd S. IF Dec.
C50	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	2nd S. IF Screen
C51	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	2nd S. IF Cath.
C52	1500		76	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	De-emphasis
C53	150		72	GP150M	D6-151	5WST15	GP2K-150	1FM-215	RF Bypass
C54	.01	600	79	P688-01	DF-103	PTE5E1	811-01	TM-11	Audio Coupling
C55	.01	600	79	P688-01	DF-103	PTE5E1	811-01	TM-11	Audio Coupling
C56	.01	600	79	P688-01	DF-103	PTE5E1	811-01	TM-11	Audio Coupling
C57	.0047	600	77	P688-0047	DF-472	PTE5D5	GP2M-0047	TM-25	Output Plate Byp.
C58	.500	500	73	1408-0005	DB-501	5WST5	GP2K-500	1FM-35	Int Sync. Sep. Cath.

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	TRANSVISION PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C59	.01	600	79	P688-01	DF-103	PTE5E1	811-01	TM-11	Sync. Coupling
C60	.05	600	74	P688-05	DF-503	PTE5E5		TM-15	Sync. Coupling
C61	.0047	600	77	P688-0047	DF-472	PTE5D5	GP2M-0047	TM-25	Sync. Coupling
C62A	5000			P688-005	DS-502	PTE5D5	811-005	TM-25	Vert. Sync. Coup. †
B	5000			P688-005	DS-502	PTE5D5	811-005	TM-25	Integrator Net.
C	5000			P688-005	DS-502	PTE5D5	811-005	TM-25	Integrator Net.
D	5000			P688-005	DS-502	PTE5D5	811-005	TM-25	Integrator Net.
C63	5000	500	1150	1487-005	DS-502	DS5D5	811-005	1FM-25	Vert. Osc. Grid
C64	.1	600	80	P688-1	DF-104	PTE5P1		TM-1	Vert. Osc. Dec
C65	.047	600	74	P688-047		PTE6S5		TM-15	Vert. Discharge
C66	.056	600	80	P688-1	DF-104	PTE6P1		TM-1	Vert. Sweep Coup.
C67	.05	600	74	P688-05		PTE6S5		TM-15	Fixed Trimmer
C68	500	500	73	1468-0005	DS-501	5WST5	GP2K-510	1FM-55	Balancing
C69	510	500	73	1468-0005	DS-501	5WST5	GP2K-510	1FM-55	Hor. Sync. Coupling
C70	510	500	73	1468-0005	DS-501	5WST5	GP2K-510	1FM-25	Hor. Sync. Coupling
C71	.01	600	79	P688-01	DF-103	PTE5E1	811-01	TM-11	AFC Filter
C72	.1	600	80	P688-1	DF-104	PTE5P1		TM-1	AFC Filter
C73	250	500	85	1468-001	DS-102	1WS01	GP2L-001	1FM-21	Hor. Feedback
C74	250	550	842	1468-00025	DS-251	5WST25	GP2K-250	1FM-325	Hor. Osc. Grid
C75	.1	600	80	P688-1	DF-104	PTE5P1		TM-1	Decoupling
C76	150		72	GP150M	D6-151	5WST15	GP2K-150	1FM-215	Hor. Discharge
C77	150		72	GP150M	D6-151	5WST15	GP2K-150	1FM-315	Hor. Discharge
C78	.05	600	79	P688-05	DF-103	PTE5E1	811-01	TM-11	Hor. Sweep Coupling
C79	1000	500	85	1468-001	DS-102	1WS01	GP2L-001	1FM-21	Hor. Discharge
C80	.047	600	74	P688-047	DF-503	PTE5E5		TM-15	Hor. Output Screen
C81	.047	600	74	P688-047		PTE6S5		TM-15	Damper Filter
C82	.01	600	841	P688-03		PTE6S3		TM-13	Damper Filter
C83	500	10000	330	HV10C	TV3-501				HV Filter
C84	.1	600	80	P688-1	DF-104	PTE6P1		TM-1	Decoupling
C85	.1500		76	GP150M	D6-152	1W5D15	GP2L-0015	1FM-215	Decoupling
C86	.1	600	80	P688-1	DF-104	PTE6P1		TM-1	AGC Filter

* Not used in all models.
† Items C62A, C62B, C62C, C62D, R79A, R79B, R79C,R79D, R79E are combined into one unit.

CONTROLS

ITEM No	RATING: RESISTANCE	RATING: WATTS	TRANSVISION PART No.	IRC PART No.	CLAROSTAT PART No.	CENTRALAB PART No.	INSTALLATION NOTES
R1A	1 Meg.	1	28	Q13-137	AM-63-Z	B-70-S	Volume control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R1A per instructions
C	Switch		Not Req.	Not Req.	SW-A	Not Req.	Attach to R1A per instructions
R2A	100KΩ	1	328	Qil-128	AM-69-S	B-60-S	Brightness control
B	Shaft		Not Req.	Not Req.	FS-3	Not Req.	Attach to R2A per instructions
C	Switch		Not Req.	76-1	SW-A	Not Req.	Attach to R2A per instructions
R3	10KΩ	1	60				Contrast control-TV-Phono switch
R4A	1 Meg.	1	37	QU-139	AM-83-S	AN-75	Height control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R4A per instructions
R5A	500Ω	1	373	QU-134	AM-69-S	AN-10	Horiz. linearity control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R5A per instructions
R6A	1 Meg.	1	374	QU-137	AM-63-S	AN-70	Vert. hold control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R6A per instructions
R7	2000Ω	2	328	W-2000	43-2000	AN-131	Focus control-Wire Wound
R8A	5000Ω	1	373	QU-114	AM-19-S	AN-10	Vert. linearity control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R8A per instructions
R9A	2 Meg.	1	38	QU-128	AM-49-S	AB-60	Horiz. drive control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R9A per instructions
R10A	1 Meg.	1	37	QU-139	AM-83-S	AN-75	AGC control
B	Shaft		Not Req.	Not Req.	FKS-1/4	AK-1	Attach to R11A per instructions
R12	25Ω	2	644	W-25	43-25	VK-111	Horiz. centering control-Wire Wound

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	TRANSVISION PART No.	IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R13	12KΩ	1			Antenna Loading
R14	2200Ω	1	46	BTS-2200	RF Amp. Grid
R15	1.3 Meg.	1			AGC Network
R16	82Ω	1			RF Amp. Cathode
R17	47KΩ	1			RF Amp. Screen
R18	10KΩ	1	50		RF Amp. Plate
R19	12KΩ	1	42		Mixer Grid Coil Shunt
R20	1 Meg.	1	60		Mixer Screen
R21	150KΩ	1			Mixer Screen
R22	12KΩ	1			Osc. Grid
R23	10KΩ	2			Osc. Plate
R24	56KΩ	1	54	BTS-56K	Mixer Plate Decoupling
R25	10KΩ 20%	1	50		Mixer Plate Coil Shunt
R26	5000Ω	2			Decoupling
R27	10KΩ	1	50		1st Video IF Amp. Grid Coil Shunt
R28	150Ω 20%	1	41		1st Video IF Amp. Cathode
R29	56KΩ	1	54	BTS-56K	1st Video IF Amp. Screen
R30	12KΩ	1	42		1st Video IF Amp. Plate Decoupling
R31	22KΩ	1	51	BTS-22K	AGC Network-See Note 1
R32	180Ω	1	41		2nd Video IF Amp. Cathode
R33	56KΩ	1	54	BTS-56K	2nd Video IF Amp. Screen
R34	1500	1	42		2nd Video IF Amp. Plate Decoupling
R35	1500 20%	1	42		3rd Video IF Amp. Cathode
R36	56KΩ	1	54	BTS-56K	3rd Video IF Amp. Screen
R37	1500 20%	1	42		3rd Video IF Amp. Plate Decoupling
R38	3300Ω	1	47	BTS-3300	Video Det. Diode Load
R39	10KΩ 20%	1	50	BTS-10K	1st Sync. Amp. Grid
R40	470KΩ	1	59	BTS-470K	DC Rest. Load
R41	470KΩ	1	59	BTS-470K	Picture Tube Grid
R42	22KΩ	1	51	BTS-22K	Isolation
R43	22KΩ	1	51	BTS-22K	Peaking Coil Shunt
R44	150Ω 20%	1	42	BW-½-150	Video Amp. Cathode
R45	5KΩ	1	64	BTA-47K	Video Amp. Screen
R46	330Ω	10	68	AB-330	Video Amp. Plate-Wire Wound

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	TRANSVISION PART No.	IRC PART No.	IDENTIFICATION CODES
R47	100KΩ	1	56	BTS-100K	Voltage Divider
R48	1 Meg.	1	60		1st Sound IF Amp. Grid
R49	47Ω	1	337		1st Sound IF Amp. Cathode
R50	100KΩ	1	56		1st Sound IF Amp. Screen
R51	1500 20%	1	42		2nd Sound IF Amp. Cathode
R52	100KΩ	1	56		2nd Sound IF Amp. Screen
R53	1500Ω	1	48	BTS-2200	2nd Sound IF Amp. Plate Decoupling
R54	150Ω 20%	1	42	BW-½-150	Decoupling
R55	56KΩ	1	54	BTS-56K	Ratio Det. Load
R56	3.3 Meg.	1	62	BTS-3.3 Meg.	AF Amp. Grid
R57	220KΩ	1	57	BTS-220K	AF Amp. Plate
R58	1000Ω	1	45	BTS-1000	AF Amp. Cathode
R59	220KΩ	1	57	BTS-220K	AF Amp. Plate
R60	470KΩ	1	59	BTS-470K	Audio Output Grid
R61	330Ω 20%	1	43	BW-½-330	Audio Output Cathode-See Note 2
R62	22KΩ	1	1007	BTA-22K	AF Amp. Decoupling
R63	10000Ω	10	343	AB-1000	Decoupling-Wire Wound
R64	10KΩ 20%	1	50	BTS-10K	AGC Network
R65	220KΩ	1	57	BTS-220K	AGC Network
R66	2200Ω	1	46	BTS-2200	1st Sync. Amp. Cathode
R67	22KΩ	1	1007	BTA-22K	1st Sync. Amp. Plate
R68	470KΩ	1	59	BTS-470K	Sync. Limiter Grid
R69	22KΩ	1	1007	BTA-22K	Sync. Limiter Plate
R70	56KΩ	1	54	BTS-56K	Voltage Di-ider
R71	470KΩ	1	59	BTS-470K	2nd Sync. Amp. Grid
R72	1000Ω	1	45	BTS-1000	2nd Sync. Amp. Cathode
R73	22KΩ	1	1007	BTA-22K	2nd Sync. Amp. Plate
R74	100KΩ	1	56	BTA-100K	Decoupling
R75	470KΩ	1	59	BTS-470K	Sync. Sep. Grid
R76	2200Ω	1	46	BTS-2200	Sync. Sep. Cathode
R77	4700Ω	1	48	BTS-4700	Sync. Sep. Cathode
R78	4700Ω	1	48	BTS-4700	Sync. Sep. Plate
R79A	56KΩ	1	*		Integrator
B	1 Meg.	1	*		Voltage Divider
C	10KΩ	1	*		Integrator
D	10KΩ	1	*		Integrator
E	10KΩ	1	*		Integrator
R80	1 Meg.	1	60	BTS-1 Meg.	Vert. Osc. Grid
R81	100KΩ	1	56	BTS-100K	Vert. Osc. Plate Decoupling
R82	1 Meg.	1	60	BTS-1 Meg.	Vert. Disch. Plate
R83	4700Ω	1	48	BTS-4700	Vert. Peaking
R84	1 Meg.	1	60	BTS-1 Meg.	Vert. Amp. Grid
R85	470Ω	1	841	BTA-470	Filter
R86	100KΩ	1	56	BTS-100K	Horiz. Phase Det. Load
R87	100KΩ	1	56	BTS-100K	Horiz. Phase Det. Load
R88	56KΩ	1	54	BTS-56K	Horiz. Linearity Coil Shunt-See Note 3
R89	56KΩ	1	54	BTS-56K	Horiz. AFC Filter Network
R90	4700Ω	1	48	BTS-4700	Horiz. Peaking
R91	1 Meg.	1	60	BTS-1 Meg.	Voltage Divider
R92	100KΩ	1	56	BTS-100K	Horiz. Osc. Plate Decoupling
R93	56KΩ	1	54	BTS-56K	Horiz. Osc. Grid
R94	680KΩ	1	1005	BTA-680K	Horiz. Osc. Plate
R95	56KΩ	1	54	BTS-56K	Horiz. Peaking
R96	1 Meg.	1	60	BTS-1 Meg.	Horiz. Output Grid
R97	9KΩ	1	940	BW-1-68	Horiz. Output Cathode-Wire Wound
R98	10ΩΩ	1	41	BW-½-100	Horiz. Output Screen
R99	10KΩ	10	344	AB-10K	Horiz. Output Screen Decoupling-Wire Wound
R100	3.3Ω	1	335		HV Rect. Filament-Wire Wound
R101	47KΩ	2	1004	BT-3-47K	Feedback
R102	510Ω	2	516	BT-2-470	Focus Coil Shunt
R103	470KΩ		59		HV Filter

* Items R79A, R79B, R79C, R79D, R79E, C62A, C62B, C62C and C62D are combined into one unit.
Note 1. Some models use a 33ΩΩ resistor in this application
Note 2. Some models use a 39ΩΩ, 1 watt resistor in this application
Note 3. Some models use a 47KΩ resistor in this application.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	TRANSVISION PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No
T1	117VAC	750VCT	5VAC	6.3VAC	303	P-8156	P-3169	
	② 2.5A	.280ADC	③ 3A	② 6A		P-8134 ①		
				SEC. 4				
				6.3VAC				
				③ 9.5A				

① Mount under chassis, and use for SEC. #3. Rewire filaments as required.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI	RATING: DC RESISTANCE SEC	TRANSVISION PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No	NOTES
T2	1080	15,000	308	A-8121	A-4001	T90-3	Vert. Block Osc. Trans
T3	90	3.90	307	A-8120	A-4002		Hor. Block Osc. Trans
T4	300Ω	70	308	A-8128	BVO-3	TFB-3	Hor. Output Trans.
	Tap ▲ 92Ω	Tap ▲ 8Ω					
		SEC 2					
		0Ω					
T5	1200Ω		305	A-8123	A-3037		Vert. Output Trans.
	Tap ▲ 10Ω						
T6A	145		310	DY-7	MD-3		Hor. Deflection Coil
B	54Ω						Vert. Deflection Coil
T7	315Ω		309	FC-10	MF-3		Focus Coil

PARTS LIST AND DESCRIPTIONS CONTINUED ON PAGE 15

TRANSVISION CHASSIS MODEL "1A"

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		TRANSVISION PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
	PRI.	SEC.	PRI.	SEC.					
T8	4500Ω	3.7Ω	300Ω	.6Ω	21	A-3877	A-2930	RO-8	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			NOTES
	FIELD RES.	V. C. IMP.	TRANSVISION PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	3.7Ω	606	ST-812 MOD. P69-S	69A2	
	CONE DIA.	V. C. DIA.				
SP2	6" x 9"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D.C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↺)	TRANSVISION PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	
L1	.280ADC	100Ω	7 Henries	304	C-2326	C-2991	TR-3300	

COILS (RF-IF)

ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TRANSVISION PART No.	MEISSNER PART No.	
L2	Ant. Trans.	0Ω	0Ω			Part of tuner
L3	Ant. Coil	0Ω				Part of tuner
L4	Ant. Coil	0Ω				Part of tuner
L5	Ant. Loading	0Ω				Part of tuner
L6	RF End Inductor	0Ω				Part of tuner
L7	RF Coil	0Ω				Part of tuner
L8	Band Pass	0Ω				Part of tuner
L9	Mixer Grid End Inductor	0Ω				Part of tuner
L10	Mixer Grid	0Ω				Part of tuner
L11	Band Pass	0Ω				Not used in all models. Part of tuner.
L12	Band Pass	0Ω				Not used in all models. Part of tuner.
L13	Osc. Shunt	0Ω				Part of tuner
L14	Osc. Coil	0Ω				Part of tuner
L15	Osc. End Inductor	0Ω				Part of tuner
L16	1st Video IF Primary	.1Ω		365		
L17	1st Video IF Secondary	.1Ω		365		
L18	2nd Video IF	.1Ω		175		Sound take off
L19	3rd Video IF	.1Ω	.1Ω	174		
L20	4th Video IF	.2Ω	.2Ω	176		
L21	RF Choke	7.5Ω		16	19-1922	250 microhenries
L22	Peaking	5.4Ω		17	19-1921	125 microhenries
L23	Peaking	6.8Ω		654	19-1922 *	200 microhenries, wound on 22KΩ resistor
L24	Peaking	5.4Ω		17	19-1921	125 microhenries
L25	Sound IF	.1Ω	.1Ω	318		
L26	Ratio Det. Trans.	.1Ω	.1Ω	317		
L27	Horiz. Freq.	38Ω		377		
L28	Horiz. Lin.	38Ω		377		

* Parallel with 22KΩ resistor.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					TRANSVISION PART No.		
M1	Bayonet	6-8	.15	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	TRANSVISION PART No.	NOTES
M2	RF Tuner		
M3	Fuse	602	3A 250V Type 3AG
M4	Fuse	931	.25A 250V Type GJV
M5	Ion Trap		

PHOTOFACT* Folder

WESTINGHOUSE MODEL
H-613K16

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WESTINGHOUSE MODEL
H-613K16 (Ch. V-2150-146)

TRADE NAME	Westinghouse Models H-613K16 (Ch. V-2150-146)
MANUFACTURER	Westinghouse Electric Corp., Home Radio Div., Sunbury, Pa.
TYPE SET	Television Receiver
TUBES	Twenty Eight
POWER SUPPLY	110-120 Volts AC
RATING	2.3 Amp. at 117 Volts AC
TUNING RANGE	Channels 2 thru 13

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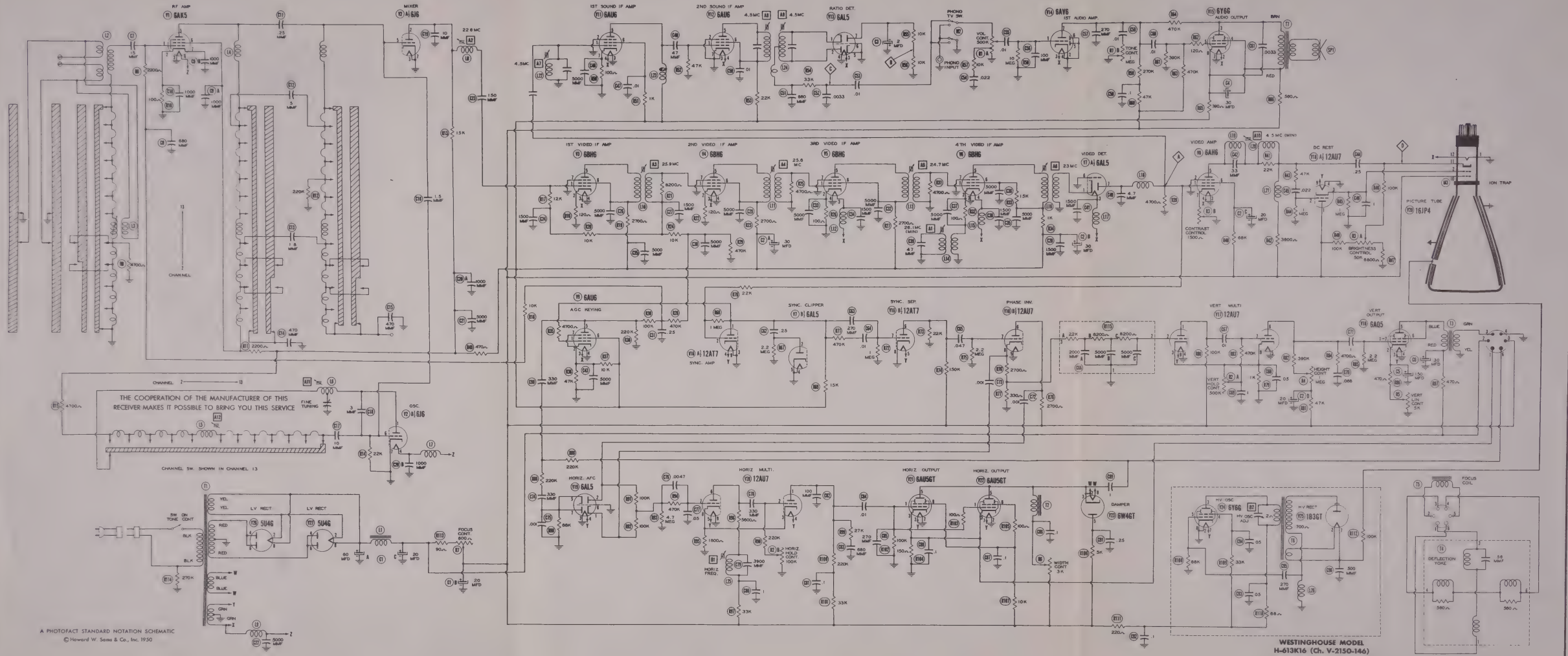
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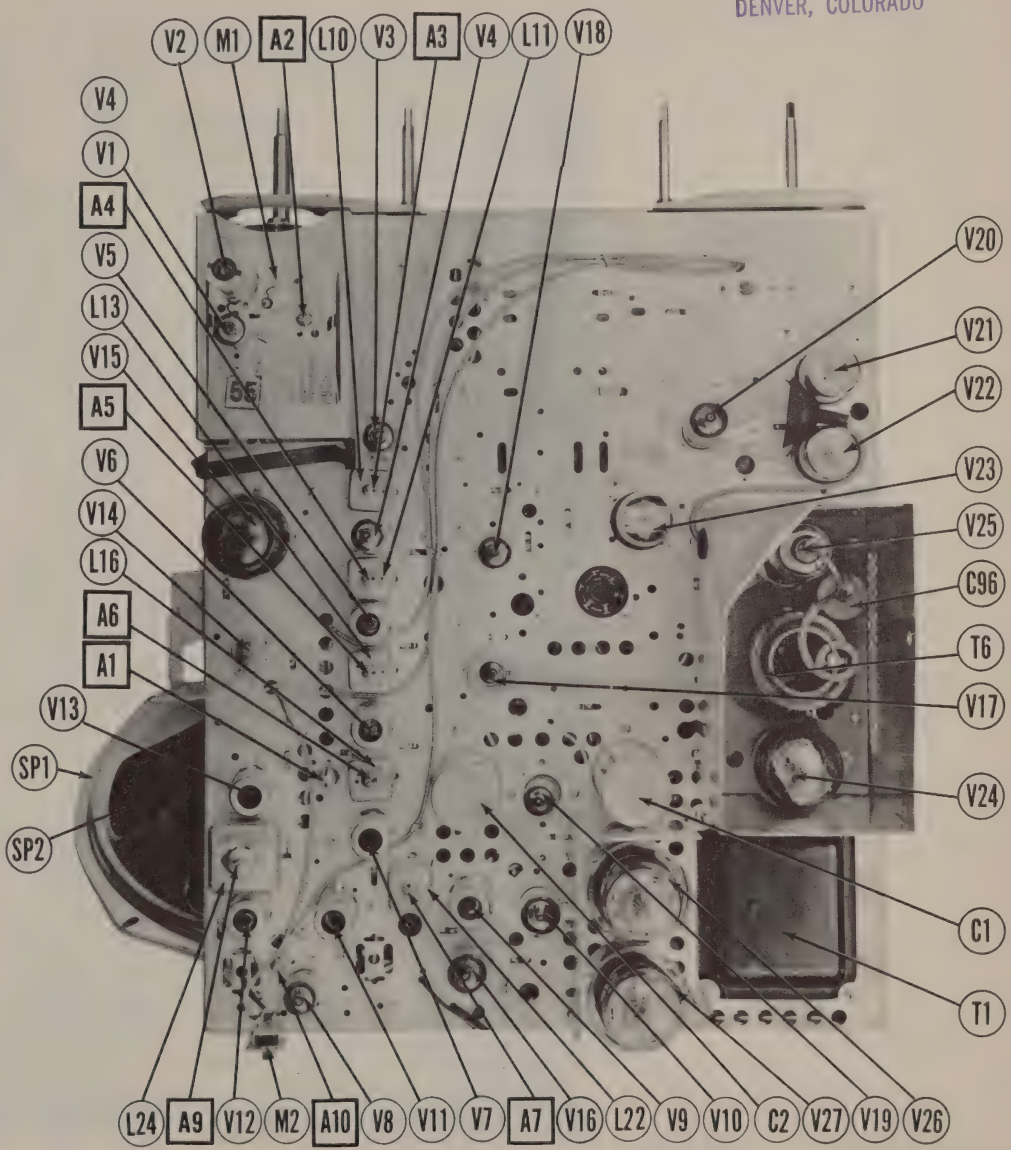

CHASSIS TOP VIEW

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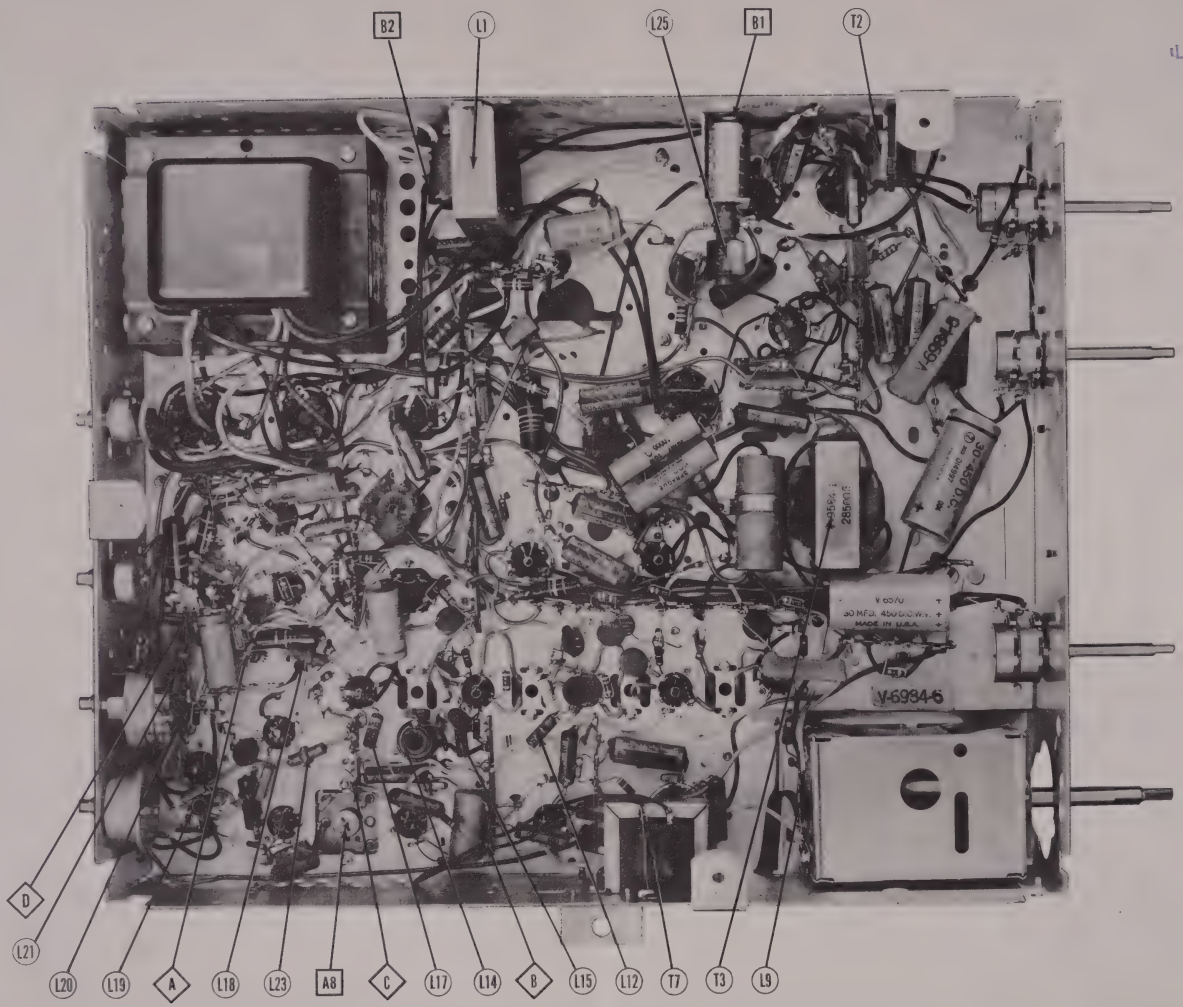

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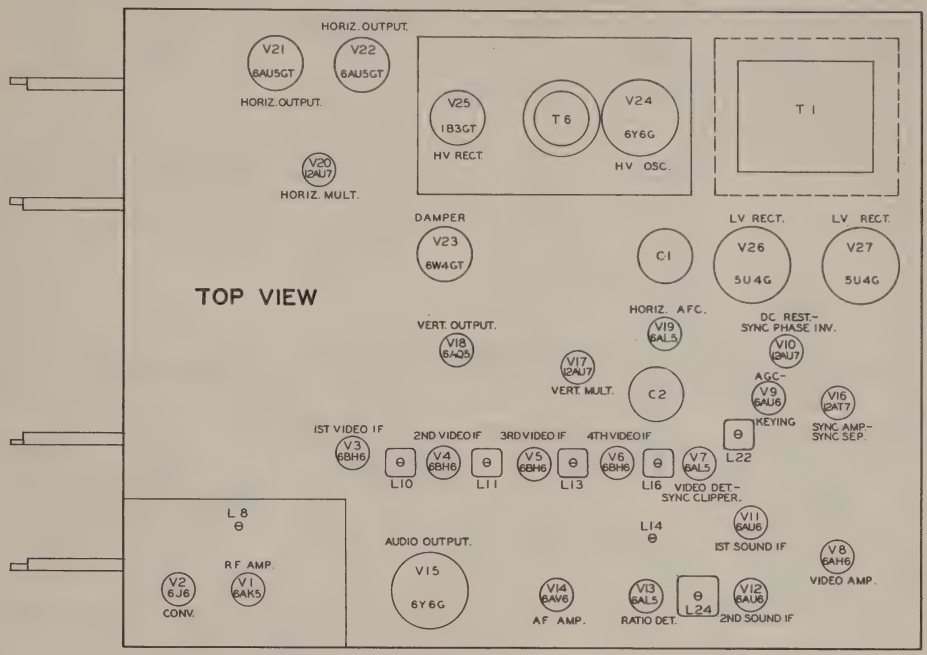

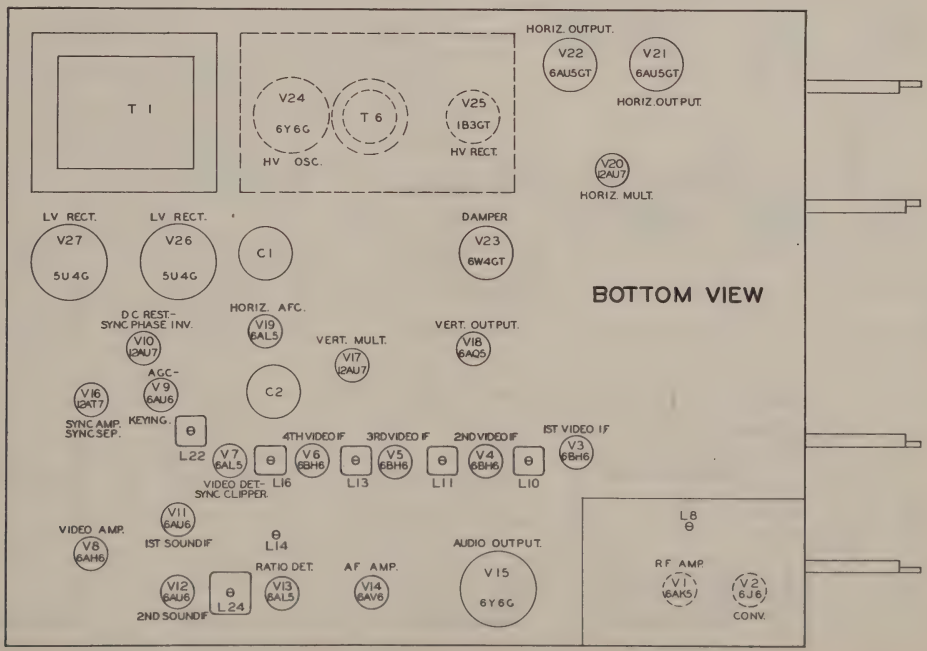

TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

If alignment is to be made with picture tube removed, the end of the high voltage lead should be securely taped and dressed away from chassis.

VIDEO IF ALIGNMENT

Remove the converter tube from its socket and replace with a 6J6 with pin 1 removed to prevent erroneous indications.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	Direct	High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis.	21.6MC (Unmod.)	Any	DC Probe to Point (A). Common to chassis.	A1	Adjust for MINIMUM deflection.
2.	Direct	"	22.6MC (Unmod.)	"	"	A2	Adjust for maximum deflection. Attenuate signal generator to maintain a maximum -2 volts reading.
3.	Direct	"	25.9MC (Unmod.)	"	"	A3	"
4.	Direct	"	25.6MC (Unmod.)	"	"	A4	"
5.	Direct	"	24.7MC (Unmod.)	"	"	A5	"
6.	Direct	"	23MC (Unmod.)	"	"	A6	"

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection. Construct a filter for the oscilloscope vertical amplifier input consisting of a 200KΩ resistor in series with the vertical amplifier input lead, and a 500MMF capacitor across the vertical amplifier terminals.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
7.	Direct	High side to ungrounded tube shield floating over mixer dummy converter tube (V2). Low side to chassis.	25.3MC (10MC SWP)	22.5MC 23.5MC 25.3MC 26.1MC	Any	Vert. Amp. thru 200KΩ to Point (A). Low side to chassis.		Check for response curve similar to figure 1. The 22.5MC and 26.1MC markers should be between 40 and 50 percent of maximum response. If necessary retouch A2 thru A6 for proper response.

SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	.001MFD	High side to Point A. Low side to chassis.	4.5MC (Unmod.)	Any	DC Probe to Point (B). Common to chassis.	A7, A8	Adjust for maximum deflection.
9.	.001MFD	"	"	"	DC Probe to Point (C). Common to Point (B).	A9	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
8.	.001MFD	High side to point A. Low side to chassis.	4.5MC (450KC Sweep)	4.5MC	Any	Vert. Amp. to Point (B). Low side to chassis.	A7, A8	Disconnect stabilizer capacitor C3. Adjust for maximum amplitude and symmetry as per figure 2.
9.	.001MFD	"	"	"	"	Vert. Amp. to Point (C). Low side to chassis.	A9	Reconnect capacitor C3. Adjust A9 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines.

4.5MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	.001MFD	High side to Point A. Low side to chassis.	4.5MC	Any	DC Probe thru detector probe as shown in figure 4. to Point (D). Common to chassis.	A10	Adjust for MINIMUM deflection. Use strong signal from signal generator.

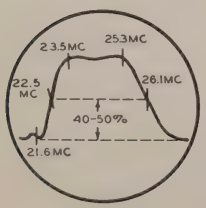

FIG. 1

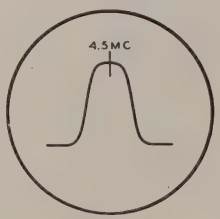

FIG. 2

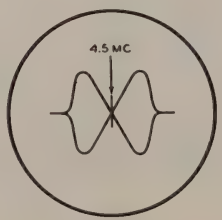

FIG. 3

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ALIGNMENT INSTRUCTIONS (CONT.)

OSCILLATOR ALIGNMENT

Remove dummy converter tube and replace original 6J6 in its socket.
Set the fine tuning control to the mid-position of its range.
The RF and Mixer portions of this receiver are pre-set at the factory and should not require adjustment in the field.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
11.	Two 120Ω carbon res.	Across antenna terminals thru 120Ω in each lead.	213MC (10MC SWP)	211.25MC 215.75MC	13	Vert. Amp. to Point (A). Low side to chassis.	A11	Adjust A-11 to place sound marker in "notch" as shown in figure 5. Video marker should be at 50% response.
12.	"	"	207MC (10MC SWP) 201MC (10MC SWP) 195MC (10MC SWP) 189MC (10MC SWP) 183MC (10MC SWP) 177MC (10MC SWP)	205.25MC 209.75MC 199.25MC 203.75MC 193.25MC 197.75MC 187.25MC 191.75MC 181.25MC 185.75MC 175.25MC 179.75MC	12 11 10 9 8 7	"		Check to see if sound marker is in place well within tuning range of fine tuning control. If not, a compromise adjustment of A-11 will be required.
13.	"	"	85MC (10MC SWP)	83.25MC 87.75MC	6	"	A12	Adjust A12 to place sound marker in "notch" as shown in figure 5. Video marker should be at 50% response.
14.	"	"	79MC (10MC SWP) 69MC (10MC SWP) 63MC (10MC SWP) 57MC (10MC SWP)	77.25MC 79.75MC 67.25MC 71.75MC 61.25MC 65.75MC 55.25MC 59.75MC	5 4 3 2	"		Check to see if sound marker is in place well within tuning range of fine tuning control. If not, a compromise adjustment of A12 will be required.

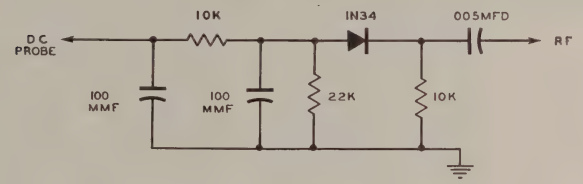


FIG. 4

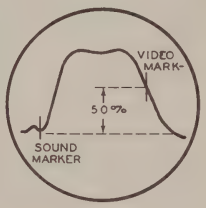
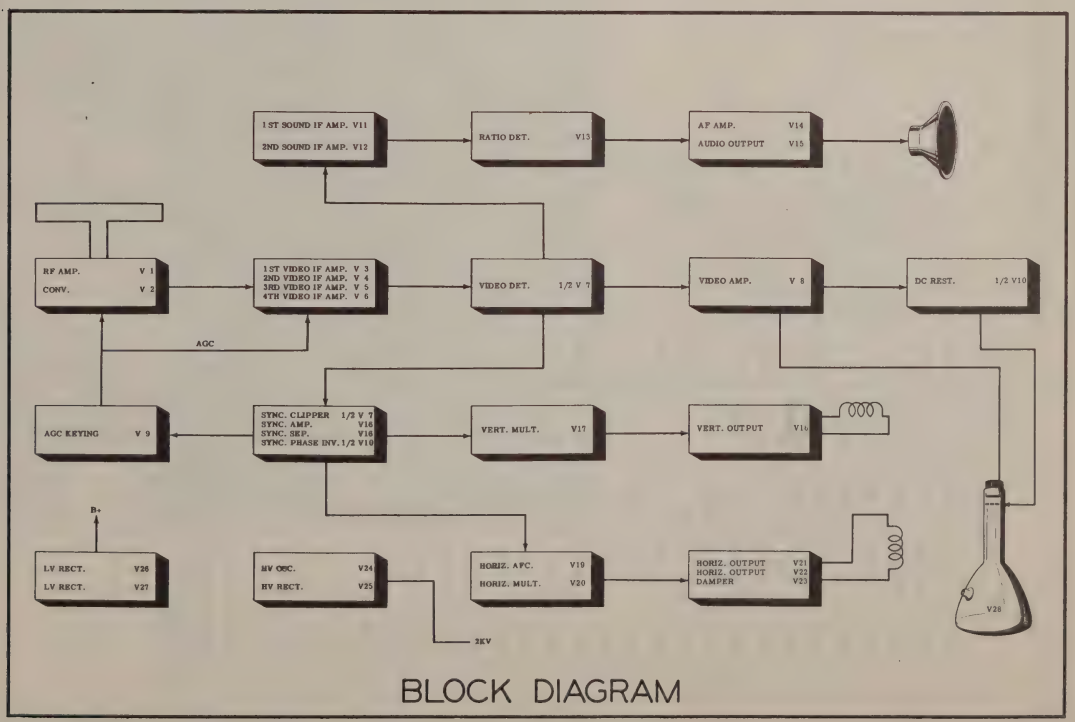


FIG. 5



BLOCK DIAGRAM

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AK5	-.2VDC	.7VDC	0V.	6.3VAC	115VDC	115VDC	.7VDC		
V 2	6J6	95VDC	80VDC	0V.	6.3VAC	-2VDC	§-7.4VDC	0V.		
V 3	6BH6	-.2VDC	.7VDC	6.3VAC	0V.	120VDC	120VDC	0V.		
V 4	6BH6	-.2VDC	.7VDC	6.3VAC	0V.	120VDC	120VDC	0V.		
V 5	6BH6	0V.	.6VDC	6.3VAC	0V.	120VDC	120VDC	0V.		
V 6	6BH6	0V.	.9VDC	0V.	6.3VAC	125VDC	85VDC	0V.		
V 7	6AL5	0V.	-.8VDC	6.3VAC	0V.	0V.	0V.	-.5VDC		
V 8	6AH6	-.4VDC	0V.	0V.	6.3VAC	305VDC	280VDC	6VDC		
V 9	6AU6	65VDC	110VDC	6.3VAC	0V.	0V.	135VDC	110VDC		
V 10	12AU7	320VDC	.1VDC	35VDC	0V.	0V.	300VDC	0V.	16VDC	6.3VAC
V 11	6AU6	0V.	0V.	0V.	6.3VAC	135VDC	135VDC	1VDC		
V 12	6AU6	-.7VDC	0V.	0V.	6.3VAC	48VDC	48VDC	0V.		
V 13	6AL5	-1VDC	-1VDC	6.3VAC	0V.	0V.	0V.	-5VDC		
V 14	6AV6	-.2VDC	0V.	6.3VAC	0V.	0V.	0V.	110VDC		
V 15	6Y6G	0V.	6.3VAC	280VDC	290VDC	145VDC	145VDC	0V.	160VDC	
V 16	12AT7	65VDC	-.1VDC	0V.	6.3VAC	6.3VAC	34VDC	-.8VDC	0V.	0V.
V 17	12AU7	49VDC	1.6VDC	2.8VDC	0V.	0V.	115VDC 60VDC	-25VDC	2.8VDC	6.3VAC
V 18	6AQ5	.1VDC	43VDC	6.3VAC	0V.	330VDC	330VDC	.1VDC		
V 19	6AL5	3VDC	-2.3VDC	0V.	6.3VAC	0V.	0V.	0V.		
V 20	12AU7	95VDC	-3.3VDC	8.8VDC	6.3VAC	6.3VAC	185VDC	.2VDC	8.8VDC	0V.
V 21	6AU5GT	.1VDC	6.3VAC	18VDC	0V.	•	0V.	6V.	155VDC	
V 22	6AU5GT	.1VDC	0V.	18VDC	0V.	•	0V.	6.3VAC	155VDC	
V 23	6W4GT	0V.	0V.	•	0V.	55VDC	0V.	¶	¶	
V 24	6Y6G	0V.	0V.	320VDC	100VDC	55VDC	0V.	6.3VAC	0V.	
V 25	1B3GT	• DO NOT MEASURE.								
V 26	5U4G	0V.	360VDC	0V.	320VAC	0V.	320VAC	0V.	360VDC	
V 27	5U4G	0V.	360VDC	0V.	320VAC	0V.	320VAC	0V.	360VDC	
V 28	16JP4	0V.	35VDC	PIN 10 330VDC	PIN 11 125VDC	PIN 12 6.3VAC				

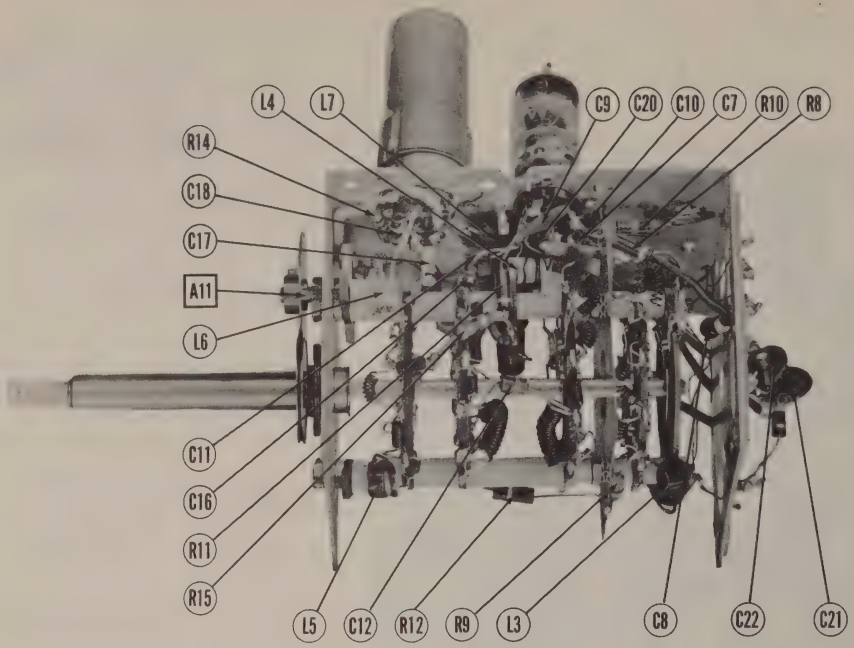
FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
§ TAKEN WITH VACUUM TUBE VOLTMETER.
¶ 6.3VAC MEASURED ACROSS FILAMENTS.
• DO NOT MEASURE.

RESISTANCE READINGS

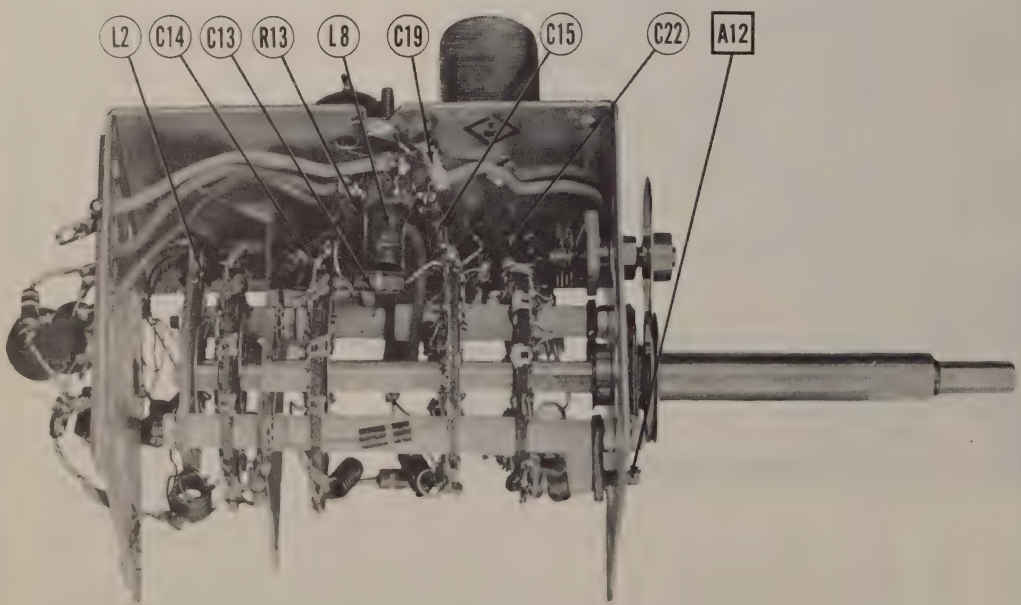
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AK5	250KΩ	100Ω	0Ω	.1Ω	▲3KΩ	▲3KΩ	100Ω		
V 2	6J6	▲5.6KΩ	▲16KΩ	0Ω	.1Ω	220KΩ	22KΩ	0Ω		
V 3	6BH6	340KΩ	120Ω	.1Ω	0Ω	▲3KΩ	▲3KΩ	0Ω		
V 4	6BH6	320KΩ	120Ω	.1Ω	0Ω	▲3KΩ	▲3KΩ	0Ω		
V 5	6BH6	1Ω	100Ω	1Ω	0Ω	▲3KΩ	▲3KΩ	0Ω		
V 6	6BH6	1Ω	100Ω	0Ω	1Ω	▲1.4KΩ	▲16KΩ	0Ω		
V 7	6AL5	1Ω	2.2 Meg.	1.8Ω	0Ω	0Ω	0Ω	4.7KΩ		
V 8	6AH6	4.7KΩ	0Ω	0Ω	.1Ω	†3.7KΩ	†68KΩ	1.5KΩ		
V 9	6AU6	▲20KΩ	45KΩ	.1Ω	0Ω	180KΩ	▲390Ω	45KΩ		
V 10	12AU7	†120Ω	1 Meg.	1 Meg.	0Ω	0Ω	†2.8KΩ	2.2 Meg.	3KΩ	.1Ω
V 11	6AU6	2Ω	0Ω	0Ω	.1Ω	▲390Ω	▲1.4KΩ	100Ω		
V 12	6AU6	47KΩ	0Ω	0Ω	.1Ω	▲22KΩ	▲22KΩ	0Ω		
V 13	6AL5	Inf.	Inf.	.1Ω	0Ω	0Ω	0Ω	20KΩ		
V 14	6AV6	10 Meg.	0Ω	.1Ω	0Ω	0Ω	0Ω	†300KΩ		
V 15	6Y6G	Inf.	.1Ω	†830Ω	†690Ω	230KΩ	230KΩ	0Ω	50KΩ	
V 16	12AT7	▲15KΩ	27KΩ	0Ω	.1Ω	.1Ω	†55KΩ	1 Meg.	0Ω	0Ω
V 17	12AU7	†100KΩ	38KΩ	1000Ω	0Ω	0Ω	†440KΩ †1.4 Meg.	470KΩ	1000Ω	.1Ω
V 18	6AQ5	2.2 Meg.	5500Ω 470Ω	.1Ω	0Ω	†1200Ω	†1200Ω	2.2 Meg.		
V 19	6AL5	4.8 Meg.	4.8 Meg.	0Ω	.1Ω	68KΩ	0Ω	68KΩ		
V 20	12AU7	†260KΩ	220KΩ	1.8KΩ	.1Ω	.1Ω	†40KΩ	5.2 Meg.	1.8KΩ	0Ω
V 21	6AU5GT	100KΩ	.1Ω	150Ω	Inf.	†2.2KΩ †2.5KΩ	Inf.	0Ω	†10KΩ	
V 22	6AU5GT	100KΩ	0Ω	150Ω	Inf.	†2.2KΩ †2.5KΩ	Inf.	.1Ω	†10KΩ	
V 23	6W4GT	Inf.	Inf.	†2.2KΩ †2.5KΩ	Inf.	†5KΩ	Inf.	†2.2KΩ †2.5KΩ	†2.2KΩ †2.5KΩ	
V 24	6Y6G	0Ω	0Ω	†410Ω	†33KΩ	68KΩ	17Ω	.1Ω	0Ω	
V 25	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP 800Ω
V 26	5U4G	Inf.	30KΩ	Inf.	15Ω	Inf.	15Ω	Inf.	30KΩ	
V 27	5U4G	Inf.	30KΩ	Inf.	15Ω	Inf.	15Ω	Inf.	30KΩ	
V 28	16JP4	0Ω	1 Meg.	PIN 10 †120Ω	PIN 11 150KΩ	PIN 12 .1Ω				

FOCUS CONTROL SET FULLY COUNTERCLOCKWISE.
▲ MEASURED FROM PIN 8 OF V15.
† MEASURED FROM PIN 2 OF V26.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



RF TUNER-RIGHT SIDE



RF TUNER-LEFT SIDE

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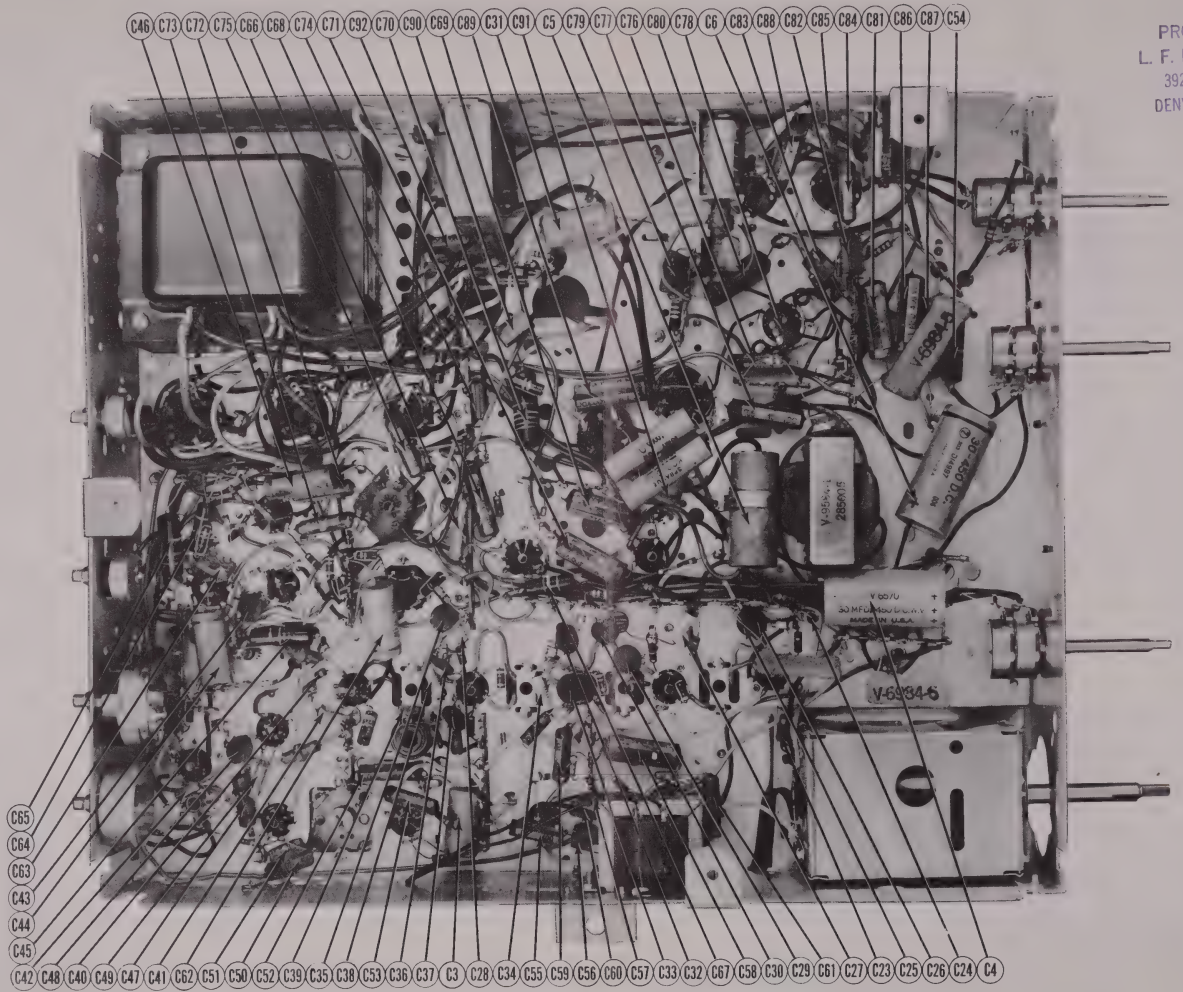
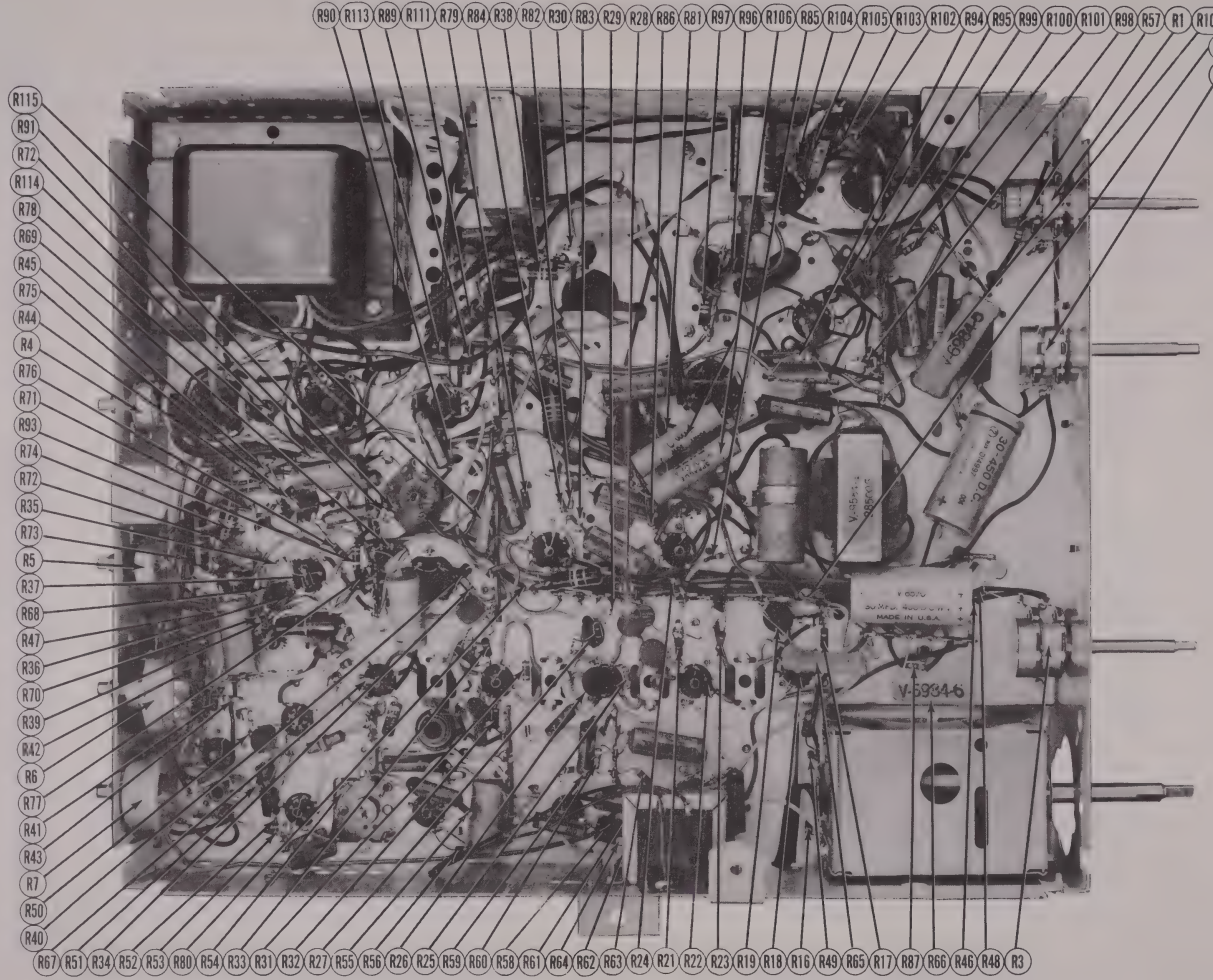
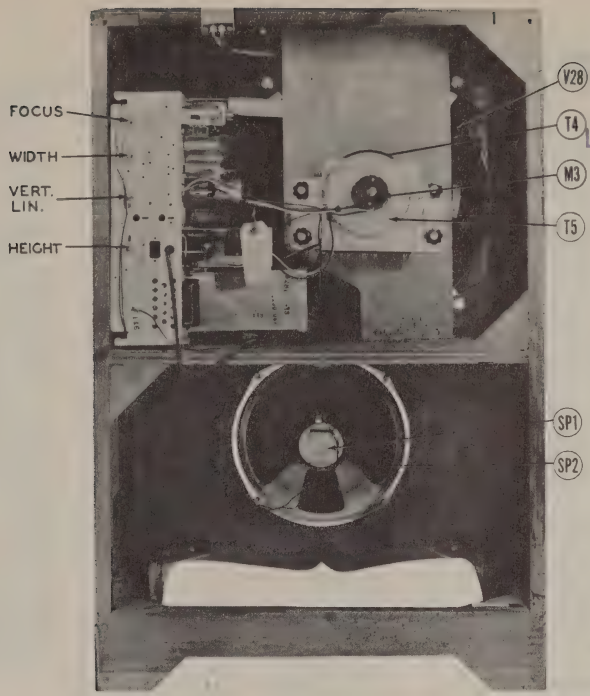


CHASSIS BOTTOM VIEW–CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



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3924 MEADE ST.
DENVER, COLORADO

CABINET-REAR VIEW

HORIZONTAL FREQUENCY ADJUSTMENT

Turn set on and tune in a TV station preferably a test pattern. Turn the horizontal hold control to the mid-position of its range.

Adjust Ringing Coil slug B1 to the center of the range over which the picture syncs horizontally.

HIGH VOLTAGE OSCILLATOR ADJUSTMENT

Turn set off and disconnect the high voltage button from the picture tube. Make up a load resistor consisting of 18 one-megohm one watt, resistors in series. Connect the 18 megohms from the high voltage lead to the chassis.

Connect a kilovoltmeter across the 18 megohm resistance.

Turn the set on and adjust the high voltage oscillator trimmer B2 for maximum reading on the meter. The kilovoltmeter must consist of a VTVM with suitable multiplier probe to measure 10KV.

If a kilovoltmeter is not available, a low range milliammeter connected between the low end of the 18 megohm resistor and the chassis may be used. Adjust B2 for maximum current reading.

DISASSEMBLY INSTRUCTIONS

1. Remove eight control knobs from front of set.
2. Remove nine screw holding rear cover in place. Remove rear cover.
3. Remove two screws from chassis brace.
4. Remove push-on type socket from base of CRT.
5. Remove high voltage lead from CRT.
6. Remove two speaker leads.
7. Remove built-in antenna leads.
8. Remove two hex head bolts from side of chassis.
9. Remove chassis.
10. Remove four screws holding speaker in cabinet. Remove speaker.

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	NOTES
		WESTINGHOUSE PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	6AK5	6AK5	7BD	
V2	Converter	6J6	6J6	7BF	
V3	1st Video IF	6BH6	6BH6	7CM	
V4	2nd Video IF	6BH6	6BH6	7CM	
V5	3rd Video IF	6BH6	6BH6	7CM	
V6	4th Video IF	6BH6	6BH6	7CM	
V7	Video Det. -Sync. Clipper	6AL5	6AL5	6BT	
V8	Video Amp.	6AH6	6AH6	7BK	
V9	AGC Keying	6AU6	6AU6	7BK	
V10	DC Rest. -Phase Inv.	12AU7	12AU7	9A	
V11	1st Sound IF	6AU6	6AU6	7BK	
V12	2nd Sound IF	6AU6	6AU6	7BK	
V13	Ratio Det.	6AL5	6AL5	6BT	
V14	AF Amp.	6AV6	6AV6	7BT	
V15	Audio Output	6Y6G	6Y6G	7AC	
V16	Sync. Amp. -Sync. Sep.	12AT7	12AT7	9A	
V17	Vert. Mult.	12AU7	12AU7	9A	
V18	Vert. Output	6AQ5	6AQ5	7BZ	
V19	Horiz. AFC	6AL5	6AL5	6BT	
V20	Horiz. Mult.	12AU7	12AU7	9A	
V21	Horiz. Output	6AU5GT	6AU5GT	8CK	
V22	Horiz. Output	6AU5GT	6AU5GT	8CK	
V23	Damper	6W4GT	6W4GT	4CG	
V24	HV Osc.	6Y6G	6Y6G	7AC	
V25	HV Rect.	1B3GT	1B3GT	3C	
V26	LV Rect.	5U4G	5U4G	5T	
V27	LV Rect.	5U4G	5U4G	5T	
V28	Picture Tube	16LP4	16LP4	12D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	WESTINGHOUSE PART No.	AEROVOX PART No.	CENTRALAB PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SPRAGUE PART No.	
C1A	60	450	V-9575	AFI244J		UP62245		TVL-3790	▲ Filter
B	20	450						TVA-1705	■ Filter
C	20	450							▲ Filter
C2A	30	400	V-9577	AFH3666J				TVL-4763	▲ Decoupling
B	30	400						TVA-2722	■ Decoupling
C	20	400							▲ V. Amp. Screen Byp. Decoupling
D	20	400							
C3	2	50	V-4880	PRS150/4		BBR2-50		TVA-12	Stabilizing Cap.
C4	30	450	V-6570	PRS450/30		BR3045A		TVA-23	Output Decoup.
C5	150	50	V-9576-1	PRS50/100 PRS50/50		BRH5015		TVA-56	Vert. Output Cath. Byp.
C6	30	450	V-6570	PRS450/30		BR3045A		TVA-23	Vert. Output Dec.
C7	15			GP15K	D6-150		GP1K-15		RF Coupling
C8	680			GP680M	D6-681		GP2K-680		AGC Filter
C9A	1000			GP1000M	D6-102		882-2 x 0015	29C7	RF Decoupling
B	1000			GP1000M	D6-102				RF Supp. Bypass
C10	1000			GP1000M	D6-102		811-001	29C4	RF Cath. Bypass
C11	.25				D2-.5				RF Coupling
C12	.5								RF Coupling
C13	1.8								RF Coupling
C14	470			GP470M	D6-471		GP2K-470		RF Decoupling
C15	470			GP470M	D6-471		GP2K-470		RF Grid Filter
C16	1.5				D2-1.5		NPOK-1.5		Osc. Coupling
C17	10			CN10FNPO	D2-10		NPOK-10		Osc. Grid Cap.
C18	3			CN3DNPO			NPOK-3		Osc. Feedback
C19	10			CN10FNPO	D2-10		NPOK-10		Fixed Trimmer
C20A	1000			GP1000M	D6-102		882-2 x 0015	29C7	RF Bypass
B	1000			GP1000M	D6-102				Conv. Fil. Bypass
C21	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	RF Bypass
C22	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	Filament Bypass
C23	150		R5CC21ZY151M	GP150M	D6-151	5W5T15	GP1K-150	1FM-315	IF Coupling
C24	1500		R5CC26ZY152M	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	AGC Filter
C25	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	RF Bypass
C26	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	1st V. IF Decoup.
C27	1500		R5CC26ZY152M	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	AGC Filter
C28	1500		R5CC26ZY152M	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	RF Bypass
C29	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	2nd V. IF Decoup.
C30	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	AGC Filter
C31	.25	400	V-6066-4254M	P488-25		GT4P25		TC-2	AGC Filter
C32	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	3rd V. IF Decoup.
C33	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	3rd V. IF Cath. Byp.
C34	1500		R5CC26ZY152M	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	3rd V. IF Fil. Byp.
C35	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	4th V. IF Decoupling
C36	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	4th V. IF Screen Byp.
C37	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	4th V. IF Cath. Byp.
C38	1500		R5CC26ZY152M	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	4th V. IF Fil. Byp.
C39	47	500		1469-00005	D2-47	5R5Q5	NPOM-50	MS-45	Fixed Trimmer
C40	4.7		V-5658-6	GP5K	D2-4.7	5W5V5	GP1K-5	MS-55	V. Diode Filter
C41	1500		R5CC26ZY152M	GP1500M	D6-152	1W5D15	GP2L-0015	1FM-215	V. Det. -Clipper Fil. Byp
C42	33	300			D2-33		NPOL-33		Fixed Trimmer
C43	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	AGC Keying Cath. Byp.
C44	.25	400	V-6066-4254M	P488-25		GT4P25		TC-2	Video Coupling
C45	.022	400	V-6023-4203M	P488-022		PTE4S2		TM-12	Video Coupling
C46	.1	400	V-6023-4104M	P488-1		PTE4P1		TM-1	DC Res. Cath. Byp.
C47	.01	400	V-6023-4103M	P488-01	D6-103	PTE4S1	811-01	TM-11	1st S. IF Screen Byp.
C48	5000		V-5596	BPD-5	D6-502	1D5D5	811-005	29C1	1st S. IF Cath. Byp.
C49	47	500	RCM20B470K	1468-00005	D6-470	5W5Q5	GP1K-47	1FM-45	S. IF Coupling
C50	.01	400	V-6023-4103M	P488-01	D6-103	PTE4S1	811-01	TM-11	2nd S. IF Dec.
C51	680	500	RCM20B681K	GP680M	D6-681	1W5T7	GP2K-680	1FM-37	Diode Load Cap.
C52	.0033	600	V-6023-6202M	P688-0033	D6-332	PTE6D3	GP2M-0033	TM-23	De-emphasis †
C53	.01	400	V-6023-4103M	P488-01	D6-103	PTE4S1	811-01	TM-11	Audio Coupling
C54	.022	400	V-6023-4203M	P488-022		PTE4S2		TM-12	Tone Compensation
C55	.01	400	V-6023-4103M	P488-01	D6-103	PTE4S1	811-01	TM-11	Audio Coupling
C56	100	500	RCM20B101K	1468-0001	D6-101	5W5T1	GP1K-100	1FM-31	AF Amp. Grid Byp.
C57	270	500	RCM20B271K	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	AF Amp. Plate Byp.

CAPACIT

ITEM No.	RATING		REPLACE		
	CAP.	VOLT	WESTINGHOUSE PART No.	AEROVOX PART No.	CENTR PART
C58	.1	400	V-6023-4104M	P488-1	
C59	.01	400	V-6023-4103M	P488-01	D6-10
C60	.01	400	V-6023-4103M	P488-01	D6-10
C61	.0033	600	V-6023-6202	P688-0033	D6-33
C62	.25	400	V-6066-4254M	P488-25	
C63	270	500	RCM20B271K	1468-00025	D6-27
C64	.01	400	V-6023-4103M	P488-01	D6-10
C65	.047	400	V-6023-4503M	P488-047	
C66A	2000		V-9213*	P688-002	PC-1
B	5000			P688-005	
C	5000			P688-005	
C67	.01	400	V-6023-4103K	P488-01	D6-10
C68	.05	400	V-6023-4503M	P488-05	
C69	.1	400	V-6023-4104M	P488-1	
C70	.068	400	V-6023-4683K	P488-068	
C71	.1	400	V-6023-4104M	P488-1	
C72	.001	600	V-6023-6102M	P688-001	D6-1
C73	.001	600	V-6023-6102M	P688-001	D6-1
C74	330	500	RCM20C331J	1469-00035	D6-3
C75	.001	600	V-6023-6102M	P688-001	D6-1
C76	.0047	400	V-6023-4472M	P688-0047	D6-4
C77	.05	400	V-6023-4503M	P488-05	
C78	330	500	RCM20C331J	1469-00035	D6-3
C79	3900	500	RCM30C392K	1464-004	
C80	.1	400	V-6023-4104M	P488-1	
C81	.1	400	V-6023-4104M	P488-1	
C82	100	500	RCM20B101K	1468-0001	D6-1
C83	680	500	RCM20B681K	GP680M	D6-6
C84	.01	400	V-6023-4103M	P488-01	D6-1
C85	270	500	RCM20B271K	1468-00025	D6-2
C86	.1	400	V-6023-4104M	P488-1	
C87	.1	400	V-6023-4104M	P488-1	
C88	.1	400	V-6023-4104M	P488-1	
C89	.1	400	V-6023-4104M	P488-1	
C90	330	500	RCM20C331J	1469-00035	D6-3
C91	.25	400	V-6066-4254M	P488-25	
C92	.1	400	V-6023-4104M	P488-1	
C93	.05	400	V-6023-4503M	P488-05	
C94	.05	400	V-6023-4503M	P488-05	
C95	270	500	RCM20B271K	1468-00025	D6-2
C96	500	10000	V-5895		TV2-

* Items C66A, C66B, C66C, R115A, R115B and R115C are
† Some models use .002MFD in this application.

CC

ITEM No.	RATING		REPLACEMENT DATA		CLA PA
	RESISTANCE	WATTS	WESTING. PART No.	IRC PART No.	
R1A	500KΩ	½	V-9686-1	Concentrikit B13-133X *	RTV
B	1 Meg.	½		B17-137 *	
C	Shaft End	½		E-202 *	
D	Switch			76-1 *	
R2A	500KΩ	½	V-9233	Concentrikit B11-133 *	RTV
B	100KΩ	½		B11-128 *	
C	Shaft End	½		E-202 *	
R3A	50KΩ	½	V-9235-2		RTV
B	1500Ω	½			
R4A	1 Meg.	½	V-6462	Q11-137	AM
B	Shaft	½		RQ	KSS
R5A	5000Ω	½	V-6463	Q11-114	AM
B	Shaft	½		RQ	KSS
R6	3000Ω	4	V-6500-2		58-
R7	600Ω	3	V-9232		RTV

* Additional parts to be used with "Concentrikit".
# File slot in shaft to duplicate original.

R

ITEM No.	RATING		REPLACEMENT DATA	
	RESISTANCE	WATTS	WESTINGHOUSE PART No.	IRC PART N
R8	2200Ω	½		BTS-2200
R9	4700Ω	½		BTS-4700
R10	100Ω	½		
R11	2200Ω	½		BTS-2200
R12	220KΩ	½		
R13	15KΩ	½		
R14	22KΩ	½		
R15	4700Ω	½		BTS-4700
R16	10KΩ	½		
R17	12KΩ	½	RC20AE123K	
R18	120Ω	1	RC30AE121K	
R19	2700Ω	½	RC20AE272K	BTS-2700
R20	10KΩ	½	RC20AE103K	
R21	8200Ω	½	RC20AE822K	
R22	120Ω	½	RC20AE121K	
R23	2700Ω	½	RC20AE272K	BTS-2700
R24	10KΩ	½	RC20AE103K	
R25	4700Ω	½	RC20AE472K	BTS-4700
R26	100Ω	½	RC20AE101K	
R27	2700Ω	½	RC20AE272K	BTS-2700
R28	470KΩ	½	RC20AE474K	BTS-470K
R29	470KΩ	½	RC20AE474K	BTS-470K
R30	100KΩ	½	RC20AE104K	BTS-100K
R31	4700Ω	½	RC20AE472K	BTS-4700
R32	100Ω	½	RC20AE101K	
R33	15KΩ	½	RC20AE153K	
R34	1000Ω	½	RC20AE102M	BTS-1000
R35	4700Ω	½	RC20AE472K	BTS-4700
R36	47KΩ	½	RC20AE473K	BTS-47K
R37	10KΩ	½	RC20AE103K	
R38	220KΩ	1	RC30AE224K	BTA-220

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.		6AK5	7BD	
V2	Converter		6J8	7BF	
V3	1st Video IF		6BH6	7CM	
V4	2nd Video IF		6BH6	7CM	
V5	3rd Video IF		6BH6	7CM	
V6	4th Video IF		6BH6	7CM	
V7	Video Det. -Sync. Clipper		6AL5	6BT	
V8	Video Amp.		6AH6	7BK	
V9	AGC Keying		6AU6	7BK	
V10	DC Rest. -Phase Inv.		12AU7	12AU7	9A
V11	1st Sound IF		6AU6	7BK	
V12	2nd Sound IF		6AU6	7BK	
V13	Ratio Det.		6AL5	6BT	
V14	AF Amp.		6AV6	7BT	
V15	Audio Output		6Y8G	7AC	
V16	Sync. Amp. -Sync Sep.		12AT7	12AT7	9A
V17	Vert. Mult.		12AU7	12AU7	9A
V18	Vert. Output		6AQ5	6AQ5	7BZ
V19	Horiz. AFC		6AL5	6AL5	6BT
V20	Horiz. Mult.		12AU7	12AU7	9A
V21	Horiz. Output		6AU5GT	6CK	
V22	Horiz. Output		6AU5GT	6CK	
V23	Damper		6W4GT	4CG	
V24	HV Osc.		5Y8G	7AC	
V25	HV Rect.		1B3GT	9C	
V26	LV Rect.		5U4G	5T	
V27	LV Rect.		5U4G	5T	
V28	Picture Tube		16LP4	16D	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	60	450	V-9575	AF1244J		UP62245		TVL-3790	▪ Filter
B	20	450						TVA-1705	▪ Filter
C	30	450							▪ Decoupling
C2A	30	400	V-9577	AFH3666J				TVL-4763	▪ Decoupling
B	30	400						TVA-2722	▪ Decoupling
C	20	400							▪ V. Amp. Screen Byp.
D	20	400							Decoupling
C3	2	50	V-4880	PRS150/4		BBR2-50		TVA-12	Stabilizing Cap.
C4	30	450	V-6570	PRS450/30		BR3045A		TVA-23	Output Decap.
C5	150	50	V-9576-1	PRS50/100 PRS50/50		BRH5015		TVA-56	Vert. Output Cath. Byp.
C6	30	450	V-6570	PRS450/30		BR3045A		TVA-23	Vert. Output Dec.
C7	15			GP15K	D6-150		GP1K-15		RF Coupling
C8	680			GP680M	D6-681		GP2K-680		AGC Filter
C9A	1000			GP1000M	D6-102			882-2 x 0015	RF Decoupling
B	1000			GP1000M	D6-102			882-2 x 0015	29C7 RF Supp. Bypass
C10	1000			GP1000M	D8-102		81L-001	29C4	RF Cath. Bypass
C11	.25								RF Coupling
C12	.5				D3-.5				RF Coupling
C13	1.8								RF Coupling
C14	470			GP470M	D6-471		GP2K-470		RF Decoupling
C15	470			GP470M	D6-471		GP2K-470		RF Grid Filter
C16	1.5				D2-1.5		NPOK-1.5		Osc. Coupling
C17	10			CN10FNPO	D2-10		NPOK-10		Osc. Grid Cap.
C18	3			CN3DNPO			NPOK-3		Osc., Feedback
C19	10			CN10FNPO	D3-10		NPOK-10		Fixed Trimmer
C20A	1000			GP1000M	D8-102			882-2 x 0015	29C7 RF Bypass
B	1000			GP1000M	D6-102				Conv. Fil. Bypass
C21	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	RF Bypass
C22	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	Filament Bypass
C23	150		R5CC212Y151M	GP150M	D6-151	1WSD15	GP1K-150	1FM-315	IF Coupling
C24	150		R5CC262Y152M	GP1500M	D6-152	1WSD15	GP2L-0015	1FM-215	AGC Filter
C25	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	RF Bypass
C26	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	1st V. IF Decoup.
C27	1500		R5CC262Y152M	GP1500M	D6-152	1WSD15	GP2L-0015	1FM-215	AGC Filter
C28	1500		R5CC262Y152M	GP1500M	D6-152	1WSD15	GP2L-0015	1FM-215	RF Bypass
C29	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	2nd V. IF Decoup.
C30	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	AGC Filter
C31	.25	400	V-6066-4254M	P488-25		GT4P25		TC-2	RF Bypass
C32	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	3rd V. IF Decoup.
C33	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	3rd V. IF Cath. Byp.
C34	1500		R5CC262Y152M	GP1500M	D6-152	1WSD15	GP2L-0015	1FM-215	3rd V. IF Fil. Byp.
C35	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	4th V. IF Decoupling
C36	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	4th V. IF Screen Byp.
C37	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	4th V. IF Cath. Byp.
C38	1500		R5CC262Y152M	GP1500M	D6-152	1WSD15	GP2L-0015	1FM-215	4th V. IF Fil. Byp.
C39	47	500		1469-00005	D2-47		5R5Q5	NPOM-50	M3-45 Fixed Trimmer
C40	4.7		V-5686-8	GP5K	D3-4.7		GP1K-5	5W5Y5	M5-55 V. Diode Filter
C41	1500		R5CC262Y152M	GP1500M	D6-152	1WSD15	GP2L-0015	1FM-215	V. Det. -Clipper Fil. Byp.
C42	33	300			D2-33		NPOL-33		Fixed Trimmer
C43	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	AGC Keying Cath. Byp.
C44	.25	400	V-6066-4254M	P488-25		GT4P25		TC-2	Video Coupling
C45	.022	400	V-6023-4203M	P488-022		PTE452		TM-12	Video Coupling
C46	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	DC Rest. Byp.
C47	.01	400	V-6023-4103M	P488-01	D6-103	PTE451	81L-01	TM-11	1st S. IF Screen Byp.
C48	5000		V-5596	BPD-5	D6-502	1D5D5	81L-005	29C1	1st S. IF Cath. Byp.
C49	47	500	RCM2DB470K	1468-00005	D6-470	1W5Q5	GP1K-47	1FM-45	S. IF Coupling
C50	.01	400	V-6023-4103M	P488-01	D6-103	PTE451	81L-01	TM-11	2nd S. IF Dec.
C51	680	500	RCM2DB68K	GP680M	D6-681		GP2K-680	1FM-37	Diode Load Cap.
C52	.0033	600	V-6023-4302M	P488-0033	D6-332	PTE5D3	GP1M-0033	TM-23	De-emphasis †
C53	.01	400	V-6023-4103M	P488-01	D6-103	PTE451	81L-01	TM-11	Audio Coupling
C54	.022	400	V-6023-4203M	P488-022		PTE452		TM-12	Tone Compensation
C55	.01	400	V-6023-4103M	P488-01	D6-103	PTE451	81L-01	TM-11	Audio Coupling
C56	100	500	RCM2DB101K	1468-0001	D6-101	5W5T1	GP1K-100	1FM-31	AF Amp. Grid Byp.
C57	270	500	RCM2DB271K	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	AF Amp. Plate Byp.

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CENTRALAB PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C58	.1	400	V-6023-4104M	P488-1		D6-104	PTE41	TM-1	AF Amp. Plate Dec.
C59	.01	400	V-6023-4103M	P488-01	D6-103	PTE451	81L-01	TM-11	Tone Compensation
C60	.01	400	V-6023-4103M	P488-01	D6-103	PTE451	81L-01	TM-11	Audio Coupling
C61	.0033	600	V-6023-4302M	P488-0033	D6-332	PTE5D3	GP2M-0033	TM-23	Output Plate Byp. †
C62	.25	400	V-6066-4254M	P488-25		GT4P25		TC-2	Sync. Coupling
C63	270	500	RCM20B271K	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	Sync. Coupling
C64	.01	400	V-6023-4103M	P488-01	D6-103	PTE451	81L-01	TM-11	Sync. Coupling
C65	.047	400	V-6023-4503M	P488-047		PTE455		TM-15	Sync. Coupling
C66A	2000			P688-002		PTE6D2	GP2M-002	TM-23	Integrator Net.
B	5000		V-9218*	P688-005	PC-100*	PTE6D5	GP2M-005	TM-25	Integrator Net.
C	5000			P688-005		PTE6D5	GP2M-005	TM-25	Integrator Net.
C67	.01	400	V-6023-4103K	P488-01	D6-103	PTE451	81L-01	TM-11	Vert. MV Feedback
C68	.05	400	V-6023-4503M	P488-05		PTE455		TM-15	Vert. MV Cath. Byp.
C69	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	Vert. MV Grid Cap.
C70	.068	400	V-6023-4683K	P488-068					Vert. Discharge
C71	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	Vert. Sweep Coupling
C72	.001	600	V-6023-6102M	P688-001	D6-102	PTE6D1	GP2L-001	TM-21	Hor. Sync. Coupling
C73	.001	500	V-6023-6102M	P688-001	D6-102	PTE6D1	GP2L-001	TM-21	Hor. Sync. Coupling
C74	330	500	RCM3DC331J	1469-00035	D6-331	5R5T3	GP2K-330	MS-33	Hor. Feedback
C75	.001	600	V-6023-6102M	P688-001	D6-102	PTE6D1	GP2L-001	TM-21	Voltage Divider
C76	.0047	400	V-6023-6472M	P688-0047	D6-472	PTE6D5	GP2M-0047	TM-35	AFC Filter
C77	.1	400	V-6023-4503M	P488-05		PTE455		TM-15	AFC Filter
C78	330	500	RCM2DC331J	1469-00035	D6-331	5R5T3	GP2K-330	MS-33	Hor. MV Feedback
C79	3900	500	RCM3DC392K	1464-004		1DR5W		MS-24	Fixed Trimmer
C80	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	Horiz. MV Decoup.
C81	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	Horiz. MV Decoup.
C82	100	500	RCM2DB101K	1468-0001	D6-101	5W5T1	GP1K-100	1FM-31	Horiz. MV Plate Byp.
C83	680	500	RCM2DB681K	GP680M	D6-681	5W5T7	GP2K-680	1FM-37	Horiz. Discharge
C84	.01	400	V-6023-4103M	P488-01	D6-103	PTE451	81L-01	TM-11	Horiz. Sweep Coup.
C85	270	500	RCM20B271K	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	Horiz. Output Grid Byp.
C86	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	Horiz. Output Plate Dec.
C87	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	Horiz. Output Screen Byp.
C88	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	Horiz. Output Cath. Byp.
C89	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	Horiz. Sweep Coup.
C90	330	500	RCM2DC331J	1469-00035	D6-331	5R5T3	GP2K-330	MS-33	Horiz. Sweep Coup.
C91	.25	400	V-6066-4254M	P488-25		GT4P25		TC-2	Damper Filter
C92	.1	400	V-6023-4104M	P488-1		PTE41		TM-1	HV Osc. Dec.
C93	.05	400	V-6023-4503M	P488-05		PTE455		TM-15	HV Osc. Plate Dec.
C94	.05	400	V-6023-4503M	P488-05		PTE455		TM-15	HV Osc. Screen Byp.
C95	270	500	RCM20B271K	1468-00025	D6-271	5W5T25	GP2K-270	1FM-325	HV Osc. Grid Cap.
C96	500	10000	V-5895		TV2-501				HV Osc. Filter

* Items C66A, C66B, C66C, R115A, R115B and R115C are combined into one unit
† Some models use .002MFD in this application.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	REPLACEMENT DATA: CENTRALAB PART No.	INSTALLATION NOTES
R1A	500KΩ			Concentrikit B13-153X *			Volume control-front-tapped at 100KΩ
B	1 Meg.			Concentrikit B13-137 *			Tone control and switch-rear
C	Shaft End		V-9686-1	E-202 *	RTV-58	SBBT-639-S	Attach per instr. in "Concentrikit".
D	Switch			76-1 *			Attach per instr. in "Concentrikit".
R2A	500KΩ			Concentrikit B1L-133 *			Vert. hold control-front
B	100KΩ		V-9233	B13-138 *	RTV-57	SBB-514	Horiz. hold control-rear
C	Shaft End			E-202 *			Attach per instr. in "Concentrikit"
R3A	50KΩ		V-9235-2		RTV-56	SBB-513	Brightness control-front
B	1500Ω						Contrast control-rear
R4A	1 Meg.		V-6462	QU-137	AM-81-S	AN-69	Height control
B	Shaft			RQ	KSS-3 #	AK-1	Attach to R4A per instructions
R5A	3000Ω		V-6463	QU-114	AM-19-S	AN-10	Vert. linearity
B	Shaft			RQ	KSS-3 #	AK-1	Attach to R5A per instructions
R6	3000Ω	4	V-6500-2		58-3000 #	W-133 #	Width control-Wire Wound
R7	8000	3	V-9232		RTV-59	V-127	Focus control-Wire Wound

* Additional parts to be used with "Concentrikit".
# File slot in shaft to duplicate original.

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R8	2200Ω	½		BTS-2200	RF Amp. Grid-See Note 1
R9	4700Ω	½		BTS-4700	Antenna Coil Shunt-See Note 2
R10	100Ω	½			RF Amp. Cathode
R11	2200Ω	½		BTS-2200	RF Amp. Decoupling-See Note 3
R12	220KΩ	½			Conv. Grid-See Note 4
R13	15KΩ	½			Conv. Plate
R14	22KΩ	2			Osc. Grid
R15	4700Ω	½		BTS-4700	Osc. Plate
R16	10KΩ	½			AGC Network
R17	12KΩ	½	RC30AE123K		1st IF Grid
R18	120Ω	1	RC30AE121K		1st IF Cathode
R19	2700Ω	½	RC30AE272K	BTS-2700	1st IF Decoupling
R20	10KΩ	½	RC30AE103K		AGC Network
R21	8200Ω	½	RC30AE822K		2nd IF Grid
R22	120Ω	½	RC30AE121K		2nd IF Cathode
R23	2700Ω	½	RC20AE272K	BTS-2700	2nd IF Decoupling
R24	10KΩ	½	RC20AE103K		AGC Network
R25	4700Ω	½	RC20AE472K	BTS-4700	3rd IF Grid
R26	100Ω	½	RC20AE101K		3rd IF Cathode
R27	2700Ω	½	RC20AE272K	BTS-2700	3rd IF Decoupling
R28	470KΩ	½	RC20AE474K	BTS-470K	AGC Network
R29	470KΩ	½	RC20AE474K	BTS-470K	AGC Network-See Note 5
R30	100KΩ	½	RC20AE104K	BTS-100K	AGC Network
R31	4700Ω	½	RC20AE472K	BTS-4700	4th IF Grid
R32	100Ω	½	RC20AE101K		4th IF Cathode
R33	15KΩ	½	RC20AE153K		4th IF Screen
R34	1000Ω	½	RC20AE102M	BTS-1000	4th IF Decoupling
R35	4700Ω	½	RC20AE472K	BTS-4700	AGC Keying Grid
R36	47KΩ	½	RC20AE473K	BTS-47K	AGC Keying Cathode
R37	10KΩ	½	RC30AE103K		Voltage Divider-See Note 6
R38	220KΩ	1	RC30AE224K	BTA-220K	AGC Keying Plate

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R39	4700Ω	1	RC30AE472K	BTS-4700	Video Det. Diode Load
R40	68KΩ	1	RC30AE683K	BTA-68K	Video Amp. Screen
R41	22KΩ	1	RC20AE223K	BTS-22K	Video Peaking Coil Shunt
R42	3600Ω 5%	½	RC30AE362J		Video Amp. Plate
R43	47KΩ	½	RC20AE473K	BTS-47K	Isolation
R44	1 Meg.	½	RC20AE105K	BTS-1 Meg.	DC Rest. Grid
R45	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Picture Tube Grid
R46	100KΩ	½	RC20AE104K	BTS-100K	Voltage Divider
R47	6800Ω	½	RC20AE682K	BTS-6800	Voltage Divider
R48	100KΩ	½	RC20AE104K	BTS-100K	Voltage Divider
R49	470Ω	½			Decoupling
R50	100Ω	½	RC20AE101K		1st Sound IF Cathode
R51	1000Ω	½	RC20AE102M		1st Sound IF Screen Decoupling
R52	47KΩ	½	RC20AE473K		2nd Sound IF Grid
R53	22KΩ 5%	½	RC20AE223K		2nd Sound IF Decoupling
R54	33KΩ	½	RC20AE333K		De-emphasis
R55	10KΩ	½	RC20AE103K	BTS-10K	Ratio Det. Diode Load
R56	10KΩ	½	RC20AE103K	BTS-10K	Ratio Det. Diode Load
R57	10KΩ	½	RC20AE103K	BTS-10K	Tone Compensation
R58	10 Meg.	½	RC20AE106M	BTS-10 Meg.	AF Amp. Grid
R59	270KΩ	½	RC20AE274K	BTS-270K	AF Amp. Plate
R60	47KΩ	½	RC20AE473K	BTS-47K	AF Amp. Plate Decoupling
R61	390KΩ 5%	½	RC20AE394J		Audio Output Grid
R62	120Ω	½	RC20AE121K		Parasitic Suppressor
R63	470KΩ 5%	½	RC20AE474J	BTS-470K-5%	Voltage Divider-See Note 7
R64	470KΩ	½	RC20AE474K	BTS-470K	AF Feedback
R65	3900	5	V-6984-9		Audio Output Cathode-Wire Wound
R66	560Ω	9	V-6984-6		Audio Output Decoupling-Wire Wound
R67	2.2 Meg.	½	RC30AE225K	BTS-2.2 Meg.	Sync. Clipper Diode Shunt
R68	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Sync. Amp. Grid
R69	15KΩ	½	RC20AE153K	BTS-15K	Sync. Amp. Plate
R70	22KΩ	½	RC20AE223K	BTS-22K	Decoupling-See Note 8
R71	470KΩ	½	RC30AE474K	BTS-470K	Charge Limiting
R72	1 Meg.	½	RC20AE105K	BTS-1 Meg.	Sync. Sep. Grid
R73	22KΩ	½	RC20AE223K	BTS-22K	Voltage Divider
R74	150KΩ	½	RC20AE154K	BTS-150K	Sync. Sep. Plate
R75	2.2 Meg.	½	RC30AE225K	BTS-2.2 Meg.	Sync. Phase Inv. Grid
R76	2700Ω	½	RC20AE272K	BTS-2700	Sync. Phase Inv. Cathode
R77	330Ω	½	RC20AE331K	BTS-330	Sync. Phase Inv. Cathode
R78	2700Ω	½	RC20AE272K	BTS-2700	Sync. Phase Inv. Plate
R79	1000Ω	½	RC20AE102K	BTS-1000	Vert. Mult. Cathode
R80	100KΩ	½	RC20AE104K	BTS-100K	Vert. Mult. Plate
R81	47KΩ	½	RC20AE473K	BTS-47K	Vert. Mult. Decoupling
R82	390KΩ	½	RC20AE394J	BTS-390K	Vert. Mult. Plate
R83	470KΩ	½	RC30AE474K	BTS-470K	Vert. Mult. Grid
R84	4700Ω	½	RC20AE472K	BTS-4700	Vert. Peaking-See Note 9
R85	2.2 Meg.	½	RC30AE225K	BTS-2.2 Meg.	Vert. Output Grid
R86	470Ω	½	RC20AE471K	BTS-470	Vert. Output Cathode
R87	470Ω	½	RC20AE471K	BTS-470	Vert. Output Decoupling
R88	220KΩ	½	RC30AE224K	BTA-220K	Feedback
R89	220KΩ	½	RC30AE224K	BTA-220K	Feedback
R90	68KΩ	½	RC20AE683K	BTS-68K	Horiz. AFC Filter
R91	100KΩ 5%	½	RC20AE104J	BTS-100K-5%	Horiz. AFC Diode Load
R92	100KΩ 5%	½	RC20AE104J	BTS-100K-5%	Horiz. AFC Diode Load
R93	4.7 Meg.	½	RC20AE475M	BTS-4.7 Meg.	Horiz. AFC Diode Load
R94	470KΩ	½	RC30AE474K	BTS-470K	Horiz. AFC Filter
R95	1800Ω	½	RC20AE182K	BTS-1800	Horiz. Mult. Cathode
R96	5600Ω	½	RC20AE562K	BTS-5600	Horiz. Mult. Plate
R97	33KΩ	½	RC30AE333K	BTA-33K	Horiz. Mult. Plate Decoupling
R98	220KΩ 5%	½	RC20AE224J	BTS-220K-5%	Horiz. Mult. Grid
R99	27KΩ	½	RC20AE273K	BTS-27K	Horiz. Peaking
R100	220KΩ	½	RC20AE224K	BTS-220K	Horiz. Mult. Plate
R101	33KΩ	½	RC20AE333K	BTS-33K	Horiz. Mult. Plate Decoupling
R102	100KΩ	½	RC20AE104K	BTS-100K	Horiz. Output Grid
R103	100Ω	½	RC20AE101K		Parasitic Suppressor
R104	150Ω	3	V-6067-4		Horiz. Output Cathode
R105	10Ω	½	RC20AE010K		Parasitic Suppressor
R106	5000Ω	10	V-9600-3	AB-5000	Damper Plate-Wire Wound-See Notes 10 and 11
R107	10KΩ	5	V-6984-5	AB-10K	Horiz. Output Screen-Wire Wound
R108	68KΩ	½	RC20AE683K	BTS-68K	HV Osc. Grid
R109	33KΩ	2	RC41AE333K	BT-2-33K	HV Osc. Screen
R110	68Ω	½	RC20AE680K	BW-½-68	HV Osc Plate Decoupling
R111	220Ω	2	RC40AE221K	BW-2-220	Decoupling
R112	100KΩ	½	RC20AE101K		HV Filter
R113	91Ω	2	V-9902-4900K		Focus Coil Shunt
R114	270KΩ	½	RC20AE271K	BTS-270K	Line Filter
R115A	22KΩ	½	†	BTS-22K	Integrator Network
B	8200Ω	½	†	BTS-8200	Integrator Network
C	8200Ω	½	†	BTS-8200	Integrator Network

Note 1. Some models use a 1000Ω resistor in this application.
Note 2. Not used in all models.
Note 3. Some models use a 4700Ω resistor in this application.
Note 4. Some models use a 270KΩ resistor in this application.
Note 5. Some models use a 100KΩ resistor in this application.
Note 6. Some models use a 15KΩ resistor in this application.
Note 7. Some models use a 560KΩ resistor in this application.
Note 8. Some models use a 10KΩ resistor in this application.
Note 9. Some models use a 5600Ω resistor in this application.
Note 10. Some models use a 7500Ω, 10 watt resistor in this application.
Note 11. Some models use two 100KΩ, 10 watt resistors in parallel to obtain required resistance and wattage.
† Items C66A, C66B, C66C, R115A, R115B, and R115C are combined into one unit. See C66 for Part No.

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: WESTINGHOUSE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: MERIT PART No.	REPLACEMENT DATA: CHICAGO PART No.
T1	117VAC	600VCT	5VAC	12.6VAC	V-9595-1		P-3066 ②	
	① 2.3A	.260ADC	① 6A	② 6A				
				SEC. 4				
				③ 6.3VAC				
				③ 1.2A				

② Parallel two 3-Amp. filaments.

WESTINGHOUSE MODEL H-613K16 (Ch. V-2150-146)

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	SEC.	WESTINGHOUSE PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	NOTES
T2	390Ω		V-9589-1				Hor. Output Choke
T3	650Ω	8.7Ω		A-8113	A-3036	TSO-5 ①	Vert. Output Trans.
T4A	36Ω		V-8298				Hor. Deflection Coil
B	68Ω						Vert. Deflection Coil
T5	455Ω		V-9235-2		MF-2 ③		Focus Coil
T6	2Ω	700Ω	V-9278				HV Trans.
		SEC. 2					
		0Ω					

① Drill one new mounting hole.
③ Fabricate new mounting bracket.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC.	WESTING. PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
T7	2000Ω	4.5Ω	140Ω	.5Ω	V-9685	A-3876 ①	A-2902	RO-2 ①	① Drill one new mounting hole.

SPEAKER

ITEM No.	RATINGS FIELD RES.	V. C. IMP.	WESTINGHOUSE PART No.	JENSEN PART No.	QUAM PART No.	NOTES
SP1	PM	4.5Ω	V-9628		12A4A	
	CONE DIA.	V. C. DIA.				
SP2	11 3/8"	1"				

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	WESTING. PART No.	STANCOR PART No.	MERIT PART No.	CHICAGO PART No.	INSTALLATION NOTES
L1	.260ADC	41.5Ω	1.4 Henries	V-6471	C-2325	C-2996 ①	TR-3300	① Drill one new mounting hole.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	SEC.	WESTINGHOUSE PART No.	MEISSNER PART No.	NOTES
L2	Ant. Coil	0Ω				Part of tuner V-8210
L3	Ant. Coil	0Ω				Part of tuner V-8210
L4	RF Coil	0Ω				Part of tuner V-8210
L5	Osc. Coil	0Ω				Channel 6, part of tuner V-8210
L6	Osc. Coil	0Ω				Channel 13, part of tuner V-8210
L7	Fil. Choke	.5Ω				Part of tuner V-8210
L8	1st Video IF	.8Ω				Part of tuner V-8210
L9	Fil. Choke	0Ω		V-4886-2		
L10	2nd Video IF	1Ω	1Ω	V-9586-1		
L11	3rd Video IF	1Ω	1Ω	V-9586-1		
L12	Fil. Choke	1Ω		V-9099-1		
L13	4th Video IF	1Ω	1Ω	V-9586-1		
L14	21.6MC Trap	.2Ω	.1Ω	V-9592		
L15	Fil. Choke	1Ω		V-9099-1		
L16	5th Video IF	1Ω	1Ω	V-9586-2		
L17	Fil. Choke	1.8Ω		V-9099-2		
L18	Peaking	5Ω		V-5902-4		
L19	4.5MC Trap	2Ω		V-9591		
L20	Peaking	5.6Ω		V-5902-1		
L21	Peaking	7.8Ω		V-5902-5		
L22	Sound IF	2Ω		V-9594		
L23	RF Choke	5Ω		V-5902-4		
L24	Ratio Det. Trans.	6.5Ω	.8Ω	V-9574		
L25	Ringing	100Ω		V-6764		
L26	RF Choke	17Ω		V-9279-1		

MISCELLANEOUS

ITEM No.	PART NAME	WESTINGHOUSE PART No.	NOTES
M1	RF Tuner	V-8210	
M2	Switch	V-5406	TV-Phono
M3	Ion Trap	V-6573-4	
	Trimmer	V-6454	HV Osc.
	Antenna Assembly	V-9521-2	
	Safety Glass	V-9626-2	
	Cabinet	V-1203-1	Mahogany
	Knob	V-6284-7	Channel selector
	Knob	V-9104-4	Fine tuning
	Knob	V-9547-1	Antenna tuning
	Knob	V-9104-1	Brightness, Tone, Vert. hold
	Knob	V-8146-1	Contrast, Volume, Horiz. hold

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V-M MODEL 950

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V-M MODEL 950

V-M MODEL 950

GENERAL INFORMATION

The V-M 950 Tri-o-matic Record Changer Intermix Model is designed to play standard 78 RPM, fine-groove 45 RPM, or long-play 33-1/3 RPM records of standard commercial dimensions. Records up to 12 inches in diameter can be played manually.

Features of this changer include playing and automatically changing as many as ten - 12", twelve - 10", or any assortment of 10" and 12" of the same type (78 RPM or 33-1/3 RPM).

A full stack of twelve - 7", 33-1/3 RPM records or a full stack of twelve - 7", 45 RPM records (with the adapter inserted in the record) will also play on this changer.

The changer shuts off after the last record has been played.

Connect this changer only to an outlet supplying 117 volts, 60-cycle AC unless otherwise specified. Power consumption, 25 Watts.

Manufactured by:

V-M Corporation,
Benton Harbor, Michigan

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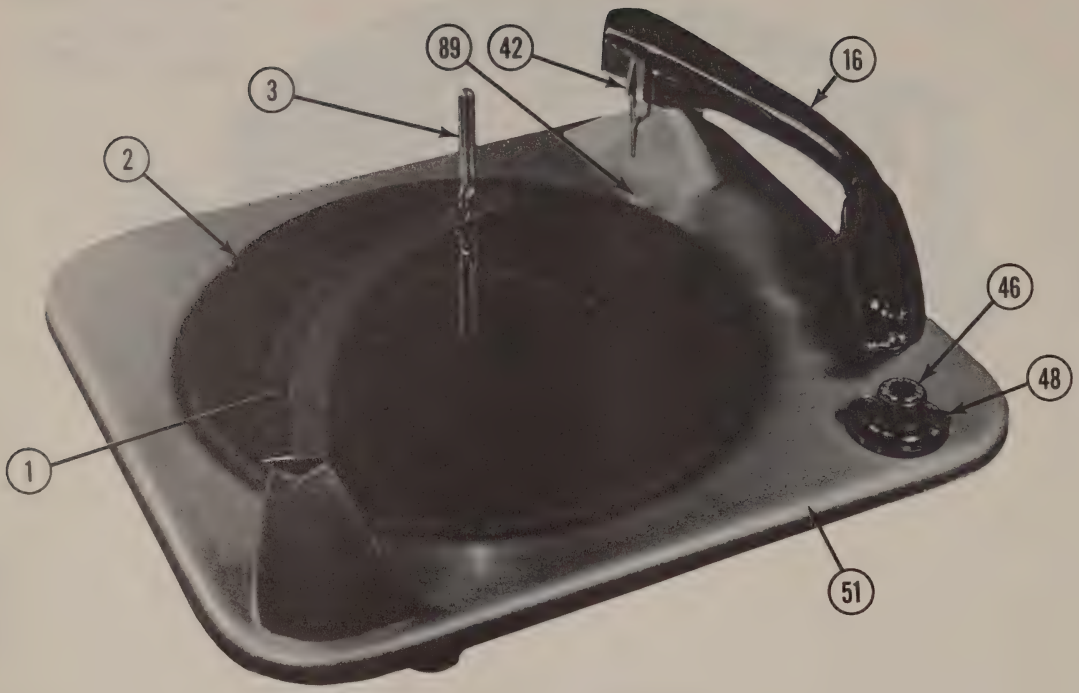

PREPARING FOR OPERATION

SHIPPING BOLTS: Before placing in operation, the machine must be floated freely on the mounting springs. During shipment, the mechanism is secured by means of two shipping bolts. To float the changer, remove the turntable by lifting it straight up the spindle. Turn the two shipping bolts in a clockwise direction as far as they will go and replace the turntable. Before the turntable can be fully seated, the idler wheel must be gently pushed back out of the way to prevent damage to the rubber tire.

OPERATION

Loading -

1. Pull straight up on record support knob until record support clears spindle. Swing record support to the left until pin in shaft drops into locating groove.

2. Changer will automatically play ten - 12" either standard or long-play records, twelve - 10" either standard or long-play records, any assortment of ten - 12" and 10" records intermixed, or twelve - 7" long-play or fine-groove records.

NOTE: Standard, fine-groove, and long-play records cannot be intermixed. Motor speed control knob must be reset for each type of recording.

3. Place records on spindle and lower to offset shelf. Hold records level and replace record support over spindle.

To Play Standard Recordings -

1. Motor speed control knob must be in the "78" position.

2. To start, turn changer control knob to "Rej." and release. Changer will operate automatically until the last record has been played. Pickup arm returns to rest and the changer control knob to the "Off" position. Changer automatically stops.

LEVELING RECORD CHANGER: It is essential to have the record changer absolutely level. Use a torpedo or similar type level on the record changer baseplate. Use adequate shims to level the record changer pan or radio combination cabinet to achieve perfect level.

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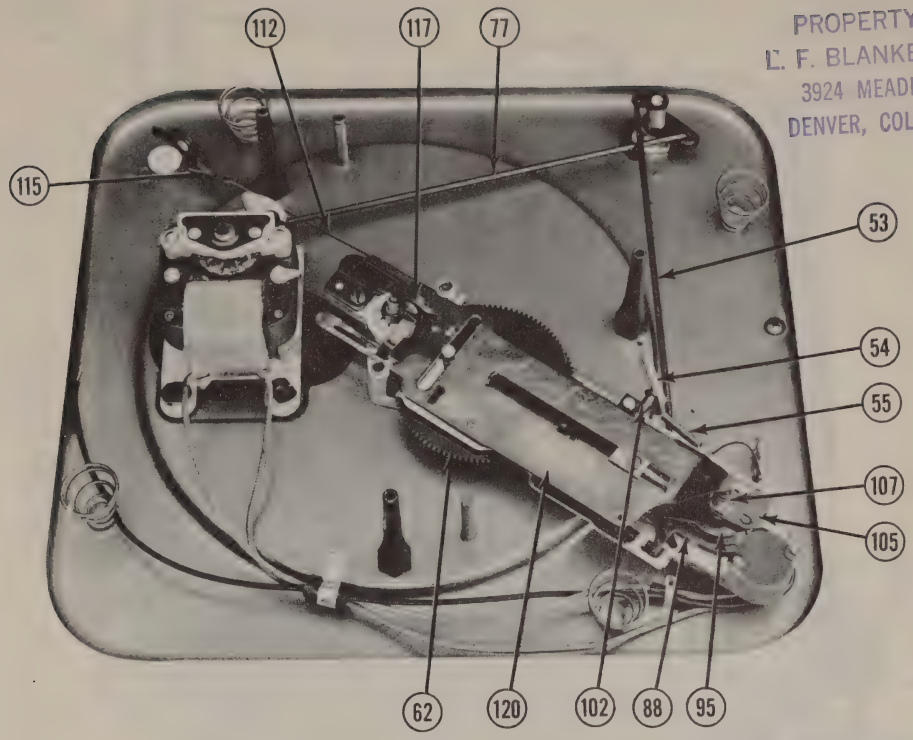


Figure 3

To Play Long-Play (33-1/3 RPM) Records -

1. Motor speed control knob must be in the "33" position.

To Play Fine-Groove (45 RPM) Records -

1. Motor speed control knob must be in the "45" position.

2. These records are manufactured with a 1-1/2" spindle hole. It is essential that a record adapter be inserted into each 45 RPM record to be played. This is necessary to reduce the spindle hole to conventional size.

REJECTING: To reject a record at any time while changer is operating, turn changer control knob to "Rej." and release.

STOPPING: To turn off changer before automatic shut-off, turn changer control knob to "Off." Lift pickup arm and place on rest.

UNLOADING: Lift the record support and swing to the left until pin on shaft drops into locating groove. Lift stack of records straight up and off spindle.

MANUAL OPERATION: To play single records or home recordings, allow the changer to go through its complete shut-off cycle. Lift the record support arm and move it to the left clear of the turntable. Place record on spindle and lower to spindle shelf. Tilt record down toward the rear of pickup arm and lower record to turntable. Turn changer control knob to "On" position only. Raise pickup arm and place in lead-in groove of record.

REPEATING OF 7", 10", OR 12" RECORDS: To repeat records, swing record support clear of spindle, place record on the turntable, and start changer. Record repeats until control is turned "Off." If a 12" record is repeated, wait for the changer to finish cycling and reposition the pickup arm manually to the 12" position.

SUGGESTIONS: When loading and unloading the changer, use care to prevent bending of the spindle. Records should not be left on the spindle except during operation of changer. Records will warp. When machine is not in use, it is suggested that the speed control knob be left in the "78" position. For best reproduction, keep needle and records clean. Store records flat, in folders or in albums. Do not lay record on record.

CHANGE CYCLE

This changer is provided with what is known as a velocity trip mechanism. The change cycle is started by the faster inward motion of the pickup arm when the needle enters the trip grooves at the end of the record. Only records having fast-finishing grooves before the eccentric cycling groove will operate this velocity trip.

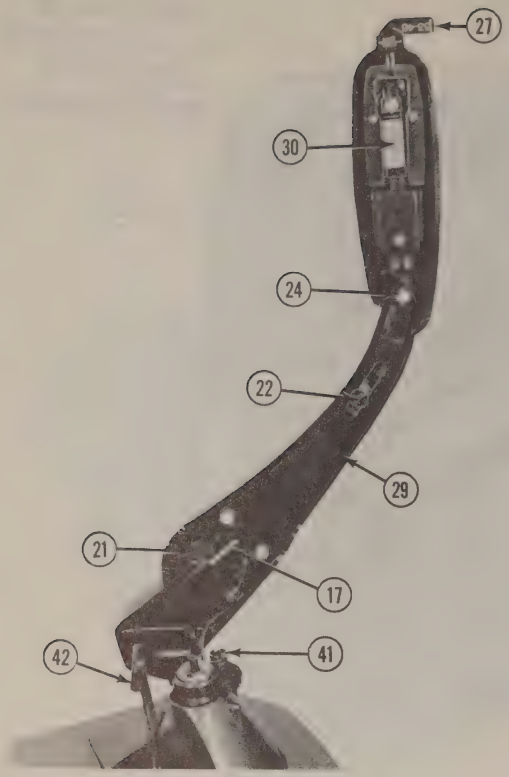
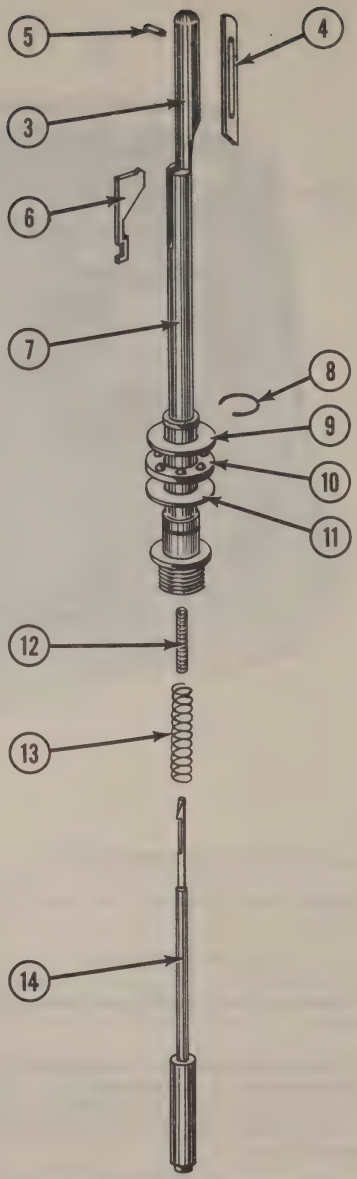


Figure 4

The pickup arm and hinge assembly and trip finger cam (105) are secured at opposite ends of the pickup arm shaft and sleeve (43) so that they move in unison. As the pickup arm nears the end of the record, the trip finger cam (105) pushes the trip link (110), which, in turn, engages the trip lever (68) rotating the pawl lever (65) to move the trip pawl (69) toward the hub on the turntable. While a record is playing, the small motions of the trip pawl (67) are not sufficient to cycle the mechanism because on each revolution of turntable the wiping contact by the hub projection moves the trip pawl (67) back to clear the projection.

In the first revolution of the turntable during which the pickup arm advances rapidly, the trip pawl (67) is moved far enough to definitely engage the projection on the turntable hub. The gear on the turntable hub will now engage the main gear (62) and start its rotation. This, in turn, starts the lateral motion of the slide and cam assembly (120). The slide and cam assembly (120) moves to the rear through the action of an eccentric pin (71) on the main gear (62) moving in the cross slot on the slide and cam assembly (120).

As the slide and cam assembly (120) begins to move, the cam surface at the rear pushes the lift pin (35) upward, raising the pickup arm clear of the record. At the same time, the tab on the rear of the slide and cam assembly (120) contacts the trip finger cam (105) swinging the pickup arm clear of the turntable.



A PHOTOFACT "EXPLODED" VIEW
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Figure 5

The front edge of the ejector link slot in the slide and cam assembly (120) then contacts the ejector link on the ejector link assembly (117). The ejector link moves the pusher shaft and housing assembly (14) upward actuating the spindle assembly (3), causing the record pusher (6) to move straight up so as to enter the center hole of the record, and then to be pivoted forward, dropping a record to the turntable. (See Figure 5 .)

The spindle guide (4) inside the spindle (3) prevents more than one record at a time from being ejected.

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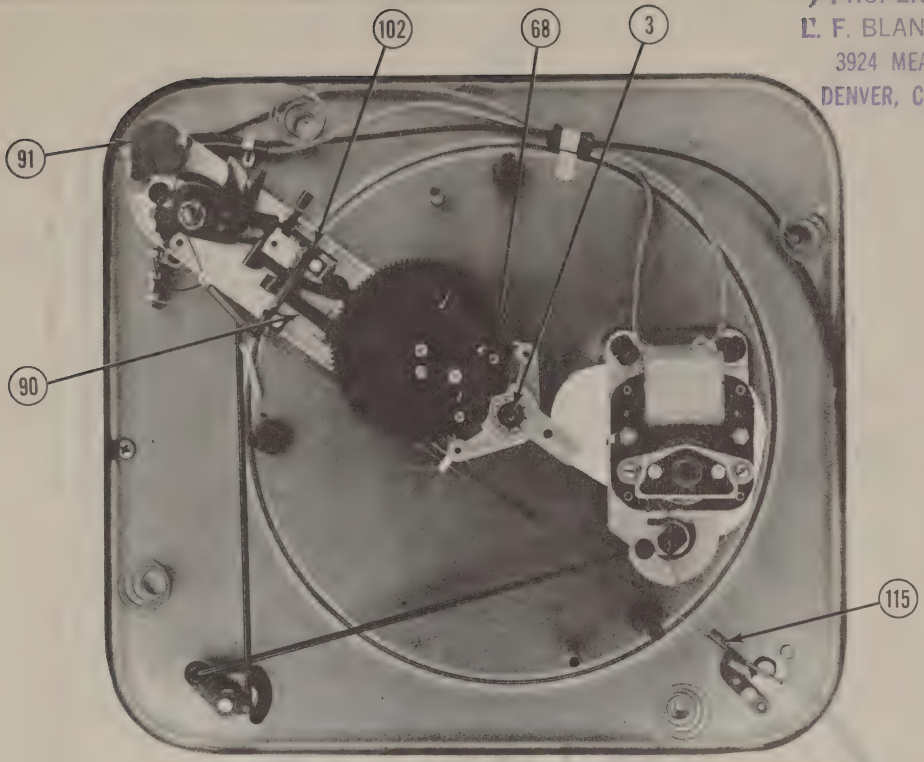


Figure 6

When records are removed from the turntable, the guide slides straight up allowing free movement up the spindle, then slides back into position by gravity.

Simultaneously, the tab on the rear of the slide and cam assembly (120) contacts the pickup arm return locator (95), moving it clear of the reset lever (81); at the same time, the pickup arm return locator (95) is locked in position with the trip finger cam (105) by means of matching holes in the pickup arm return locator (95) and detents in the trip finger cam (105). This is accomplished by the pressure of the compressed conical lift pin spring (107) overcoming the pressure of the lift pin compression spring washer (97).

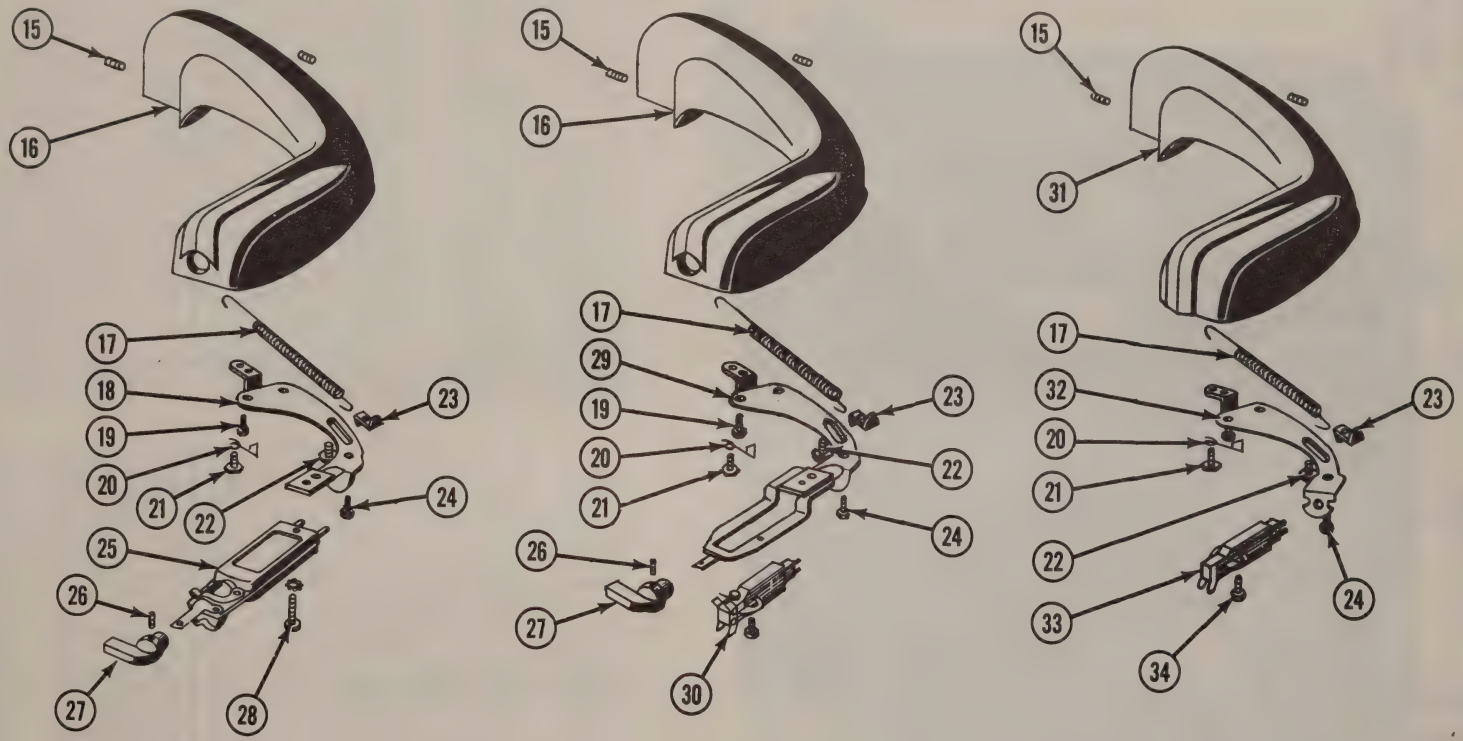
At the same time, the cam surface of the bracket on the main gear assembly (62) moves the reset lever (81) to mid-position (10" set-down) where it is held by the 12" record selector (42). The slide and cam assembly (120) continues to the rear and then starts forward. If 7" records are being changed, the rubber bumper (89) of the 7" set-down lever (90) is free to move upward permitting the other end to drop into the hole in the main gear (62) as this gear rotates. This action of the 7" set-down lever (90) raises the reset lever (81) to the upper position (7" set-down).

If 10" records are being changed, the 7" set-down lever (90) will not operate as the rubber bumper (89) will contact the edge of the record and the reset lever (81) will remain in the mid-position (10" set-down) as originally placed by the caming action of the bracket on the main gear (62).

If a 12" record is being changed, the edge of the record strikes the 12" record selector (42) releasing the reset lever (81) which drops to the bottom position (12" set-down).

As the slide and cam assembly (120) continues forward, the tab on the rear of the slide will move clear of the pickup arm return locator (95) and trip finger cam (105), which are still locked together. These rotate under the action of the pickup arm return spring (87) until one of the three set-down steps in the pickup arm return locator (95) strikes the reset lever (81), which has been positioned by the record being changed (see above). This stops the inward movement of the pickup arm return locator (95), trip finger cam (105) and pickup arm. The pickup arm is then lowered to the lead-in grooves of the record at this point as the lift pin (35) rides down the rear cam surface of the slide and cam assembly (120). As the pressure is released from the conical lift pin spring (107), the lift pin compression spring washer (97) separates the pickup arm return locator (95) and trip finger cam (105), permitting the pickup arm to ride freely across the record.

As soon as the last record has been dropped, the



EXPLODED VIEWS OF TONE ARMS

A PHOTOFACT "EXPLODED" VIEW

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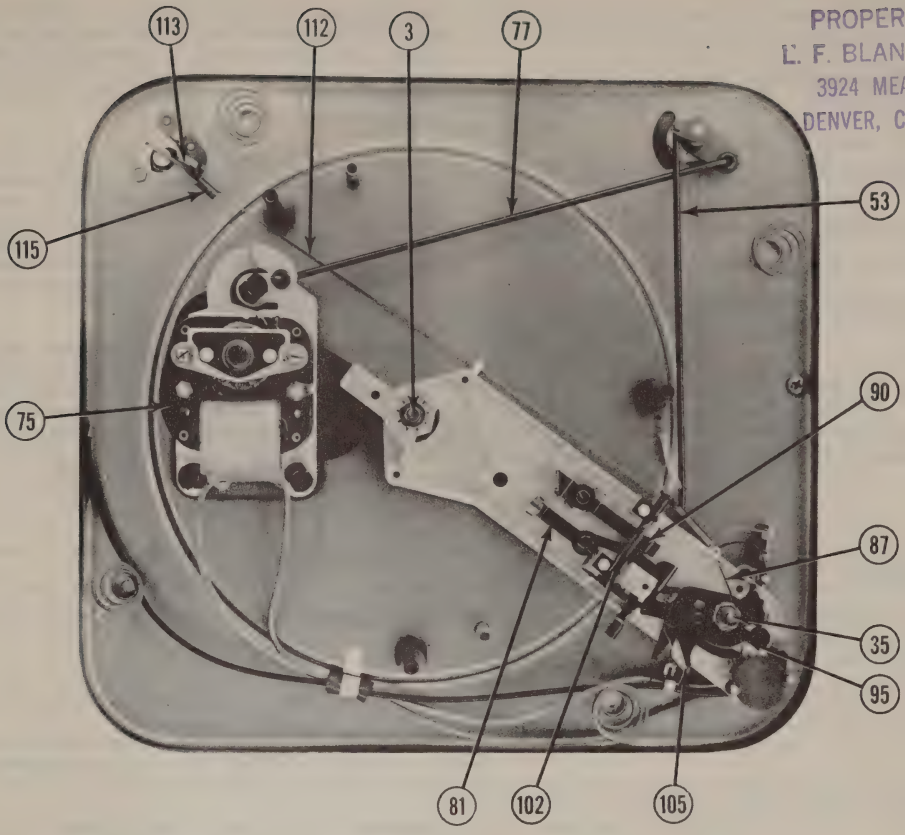

Figure 7

record support assembly (1) drops below the shelf on the spindle assembly (3) and the lower end of the record support post contacts the arm of the shut-off lever on the shut-off lever bracket assembly (117). This pulls the control link (112), which, in turn, rotates the crank of the lever assembly (102). This forces the tab on the lever assembly (102) against the slide and cam assembly (120). At the end of the change cycle, which drops the last record, this tab on the lever assembly (102) drops into the cut-out in the main slot on the slide and cam assembly (120), and the other end of the lever assembly (102) is pushed against the pickup arm return locator (95).

When the last record has been played, the change cycle starts again; however, this time, as the pickup arm return locator (95) is pivoted clear of the reset lever (81) by the tab on the slide and cam assembly (120), the lever assembly (102) rises to the shut-off position. A tab on the lever assembly (102) raises the trip link (110) to the upper position. As the pickup arm return locator (95) starts to return the pickup arm to the record, it is stopped by the lever assembly (102) with the pickup arm positioned over the pickup arm rest post (45). The main gear continues to rotate pulling the trip link (110) forward to reset it. A tab on the upper surface of the trip link (110) contacts a lever on the control shaft assembly (88) rotating the control shaft assembly to turn off the motor and return the control knob to the "Off" position.

As the slide and cam assembly (120) moves forward, the lift pin (35) rides down the rear cam surface lowering the pickup arm to the pickup arm rest post (45).

LUBRICATION

Additional lubrication should not be required for the life of the changer, but in cases of unusual use or high-operating temperature, the changer should be lubricated as follows: (Refer to the exploded view.)

Apply Andok "B" to:

1. Edges of all slots in slide and cam assembly (120).

2. Outer edges of tines on forked end of slide and cam assembly (120).

3. Lift pin cam surface on slide and cam assembly (120).

4. Lower surface of pickup arm return locator (95).

5. Inner surface of tab on rear of slide and cam assembly (120).

6. Turntable ball bearing (10).

7. Eccentric pin on main gear assembly (70).

Apply a small quantity of light mineral oil to:

1. Pickup arm shaft and sleeve bearing (43).

2. Turntable and spindle bearing.

ADJUSTMENTS

NEEDLE SET-DOWN (Refer to Figure 4); The set-down position of the needle is adjusted by means of the set-down adjustment screw (41) mounted on the hinge arm assembly (40). Turn this screw adjusting pickup arm for correct set-down on 10" record. When the correct set-down is obtained for the 10" position, the 12" and the 7" needle set-down will also be correct.

PICKUP ARM HEIGHT (Refer to Figure 4): The pickup arm height is adjusted by the lift screw (21) located at the rear of the strengthener. To raise the height of the pickup arm, turn this screw counter-clockwise. To lower the pickup arm, turn clockwise. The pickup arm height should be adjusted so that with a 1-1/8" stack of records the pickup arm lifts 1/4" straight up as the change cycle starts.

NEEDLE PRESSURE: The needle pressure should be between 10 and 12 grams. Adjustment may be made by loosening the screw (22) on the slide which moves in a slot in the tone arm strengthener (see Figure 4). Move the slide back and forth until the correct needle pressure is obtained.

TROUBLE CHART

SYMPTOM	CAUSE	REMEDY
Turntable does not revolve when control is turned to "On."	1. No current at motor.	(a) Check that current is reaching ac leads of changer. (b) Check that switch is closing. (c) Check wiring and soldered terminals in the changer.
	2. Motor defective.	(a) Remove turntable to allow motor to operate without load. If current is reaching motor and drive spindle does not rotate, the motor is defective. Repair or replace.
	3. Motor idler wheel (74) not engaging turntable rim.	If drive spindle is turning but turntable is not: (a) Check motor idler assembly to determine if it is free to contact the drive spindle and turntable rim. (b) Wipe off inside rim of the turntable (2) to remove flock, or if oily, clean the turntable rim and rubber tire of the idler wheel (74) with naphtha.
Changer does not cycle when the control knob is turned to the "Rej."	1. The manual reject not actuating the trip.	(a) Turn the control knob (46) to the reject position, hold and see that the control shaft assembly (88) has moved the trip link (110) to the rear. This should actuate the trip pawl (67) on the main gear (62), which will bring the spur on the trip pawl (67) in contact with the hub gear on the turntable hub. (b) Check for binding of the pawl lever (65), the trip lever assembly (68) and the trip pawl (67). If binding occurs, clean out all foreign matter and check for freedom.
Control knob cannot be turned to "On" position.	1. Machine shut off during cycle.	Turn the turntable clockwise, by hand, until the control knob (46) is free.
Pickup arm strikes records on spindle when it raises, or pick-up arm rest when it moves out.	1. Pickup arm height not adjusted properly.	(See instructions for adjusting pickup arm height under "Adjustments.")
Turntable speed too slow (refer to exploded view).	1. Binding in turntable bearing.	Check the turntable bearing for freedom. Hold the motor idler wheel (74) out of engagement with the turntable and spin the turntable, by hand, to see if it turns readily and

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TROUBLE CHART - Cont.

SYMPTOM	CAUSE	REMEDY
		coasts for a long time. If binding occurs, remove turntable, clean off foreign matter, and lubricate with light mineral oil.
	2. Motor pulley too small in diameter.	Replace the motor pulley with one having a greater diameter.
	3. Line voltage too low.	The line voltage should not be less than 105 volts or the turntable may be too slow.
	4. Operating temperature too low.	If the machine has been stored in a cold place or operated in surroundings at a temperature of less than 60° F., the turntable speed may be too slow.
Turntable speed too fast.	1. Motor pulley too large in diameter.	Replace the pulley with one having a smaller diameter, or grind one or two thousandths off the pulley.
Turntable stalls or slows down during cycle (refer to exploded view).	1. Motor idler not engaging turntable.	(See "Turntable Does Not Revolve When Control Knob Is Turned to 'On' Position.")
	2. Turntable bearing tight.	(See "Turntable Does Not Revolve When Control Knob Is Turned to 'On' Position.")
	3. Operating temperature too low.	The line voltage should not be less than 105 volts.
	4. Binding in drive mechanism.	Hold idler (74) away from turntable, or remove idler wheel. Cycle machine by turning turntable slowly by hand. The main gear should turn freely for the complete revolution without binding at any point: (a) If binding occurs, check for foreign matter in the gear teeth, a bent gear bearing, or bent spindle bushing. Straighten or replace. Clean and lubricate.
	5. Binding between pickup arm lift pin (35) and lift pin cam surface on slide and cam assembly (120).	Lift pin should ride freely on cam surface without binding.
	6. Spindle pusher spring compressing too far.	Cycle the changer and watch the relationship between the bottom of the pusher housing and the lower button of the pusher housing. Just before the slide and cam (120) has completed its backward motion, the pusher housing should stop its upward motion and the lower button should continue up .005 to .047" more, slightly compressing the pusher spring. If the spring compresses too much, the changer may stall on the shut-off cycle.
	7. Motor weak.	When everything checks all right, but the changer still stalls in cycle, the motor may be weak.
	8. Grease on idler wheel.	1. Wipe off idler wheel rubber tire; inner rim of turntable and rubber belts with naphtha.
	9. Idler wheel bent and not making positive engagement with drive pulley.	1. Straighten idler, or replace, as necessary.
	10. Turrets unseated from lock ring on turret shaft.	Remove turret and center lock ring. (If lock ring is distorted, replace with new lock ring.) Replace turret and press down to assure turret of being locked to the

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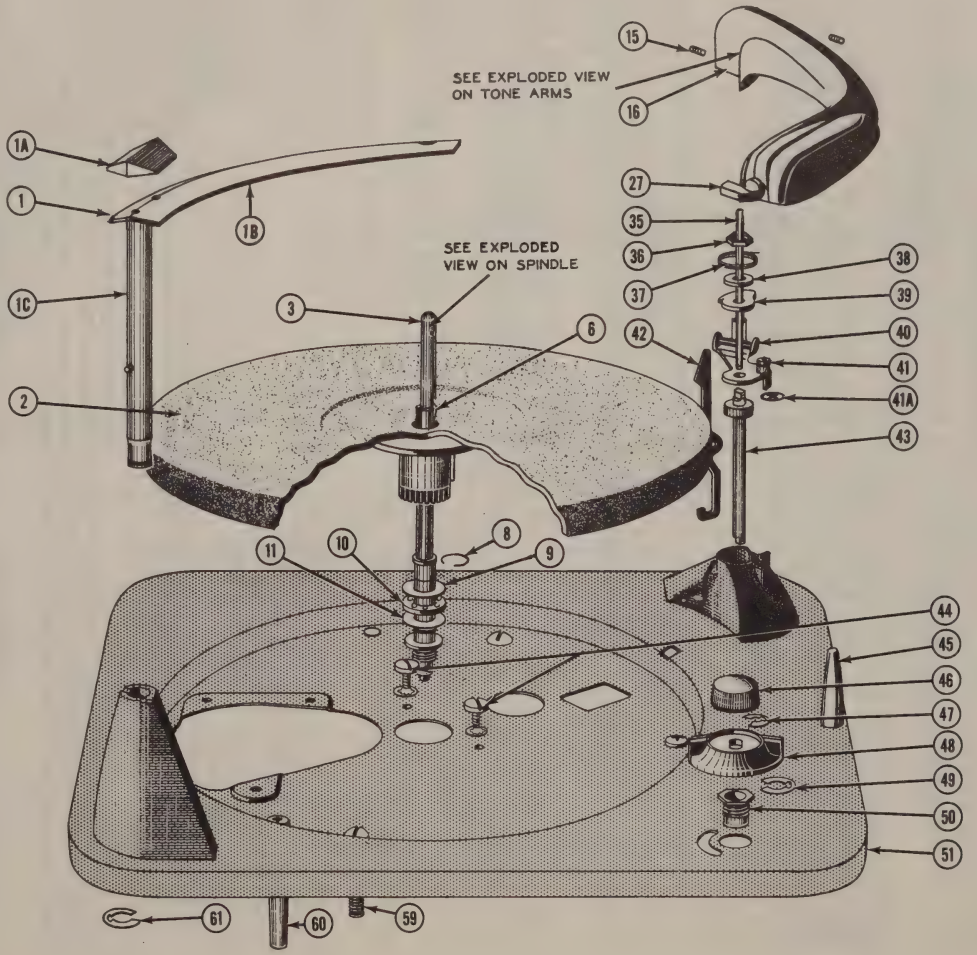

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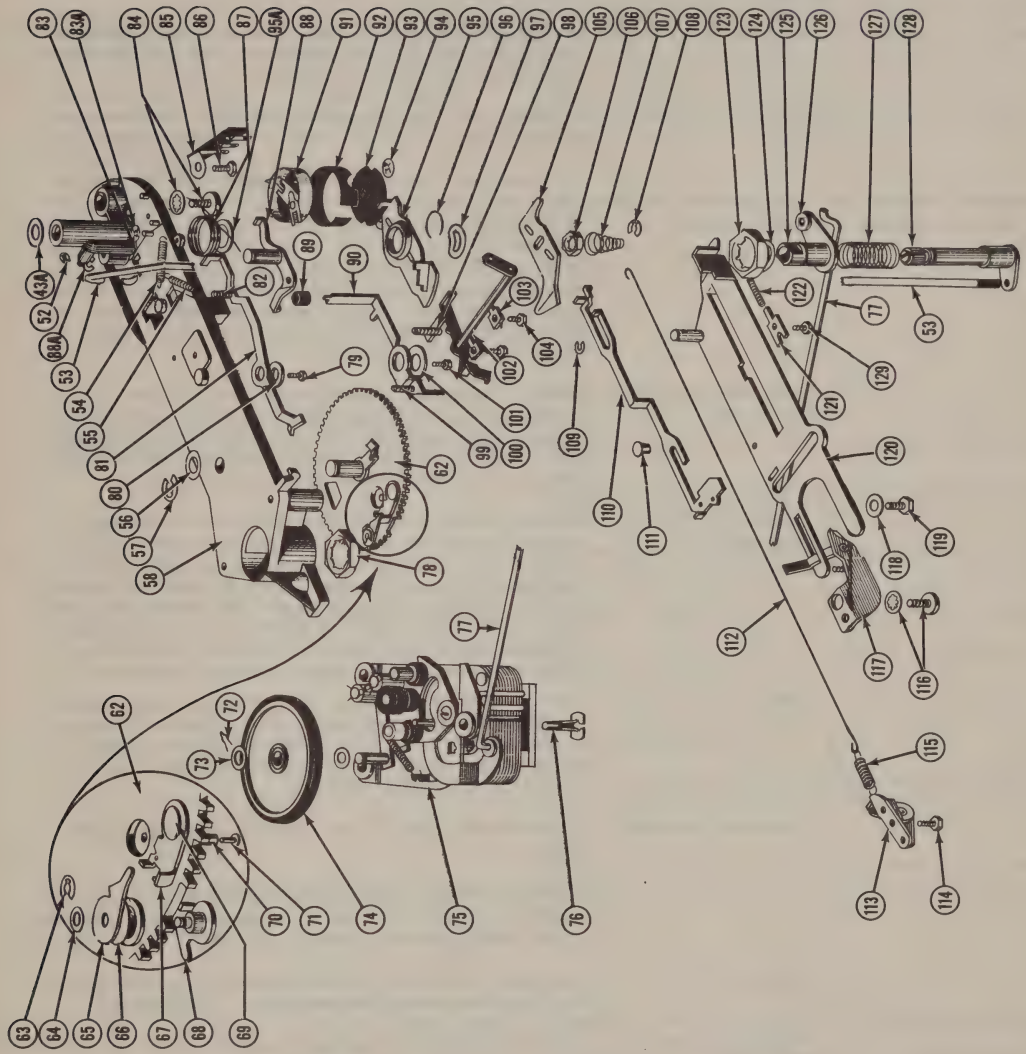

TROUBLE CHART - Cont.

SYMPTOM	CAUSE	REMEDY
		turret shaft. (Turret will snap into position when properly locked.)
	11. Idler wheel tension spring weak.	Replace spring or bend motor tension spring anchor bracket to give desired tension.
Changer continues to cycle.	Reject mechanism binding.	(a) Make certain the trip link (110) is not frozen in the reject position. (b) Make certain the changer control lever (88) is not binding and that it actuates the trip link (110) when the changer control knob (46) is turned to reject. (c) Check for binding of trip pawl (67), trip lever (68) and pawl lever (65); these must be free to turn easily. (d) Check the changer control linkage (23), (53) and (88).
Noise during playing of record.	1. Motor rumble.	If a low-pitched rumbling sound comes from the loud speaker while a record is being played, check motor grommets to be sure the motor is freely suspended on them. The motor lead wires should have slack to allow the motor to float. Motor rumble may also come from an unbalanced motor rotor; in this case, replace the motor.
	2. Defective turntable bearings (10).	Defective turntable bearings can cause rumble. Check for foreign matter in the bearing, defective balls, binding between balls and ball retainer; rough surface on washers. Clean ball bearing, sleeve bearing, and washers; lubricate with Andok "B" and light mineral oil.
	3. Defective motor idler wheel.	A rapid thumping sound while the motor is running may indicate a flat spot on the motor idler wheel (74). If this condition does not clear up after ten minutes of running time, remove the turntable and check the rubber tire on the idler. If the surface of the rubber tire is not smooth and even, replace the idler. Should the bearing of the idler wheel show signs of excessive wear or be extremely wobbly, the idler wheel should be replaced.
	4. Defective record.	Worn or defective records cause needle scratch and distortion of the recorded sound. If the record is warped, it may slip on the other records causing "Wow" (a waver in the recorded sound). An enlarged hole in the record can also cause "Wow."
	5. Turntable scrapes.	If a scraping sound occurs as the turntable revolves, check: (a) Turntable warped, causing outer rim to rise and fall. (b) Motor idler or mounting plate bent.
	6. Squeaks.	Squeaking sound as changer operates indicates lack of oil. Lubricate points indicated under "Lubrication."
	7. Pulleys on motor not properly seated.	Check that pulleys are properly seated.
	8. 7" lever (81) loose.	Check 7" lever washer (100) and screw (101) to see if they are tight.
Distortion of Recorded Sound.	1. Defective record.	(See "Noise During Playing of Record.")
	2. Defective amplifier.	Check phonograph amplifier and speaker.
	3. Bad cartridge.	Replace. (See "Defective Cartridges.")

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TROUBLE CHART - Cont.

SYMPTOM	CAUSE	REMEDY
No Sound During Playing.	1. Defective cartridge.	Replace. (See "Defective Cartridges.")
	2. Defective wiring.	Check pickup leads for a shorted or open lead.
	3. Defective amplifier.	Check phonograph amplifier and speaker.
	4. Loose cartridge terminal clips.	Remove, squeeze together slightly, and replace.
Excessive Record Wear	1. Binding on pickup arm.	(See "Needle Does Not Track Across Record Properly."
Changer does not shut off after last record has been played (refer to exploded view).	1. Record support binding (1).	The record support must drop below the off-set shoulder of the spindle or the changer will not shut off. (See "Two Records Drop at Once." - 3)
	2. Lever assembly binding (100).	Clean out dirt and make sure this operates smoothly.
	3. Control link broken (112).	Replace.
	4. Spring (115) loose or broken.	Replace.
	5. Shut-off lever binding.	Check lever and if bent, straighten.
Rough pickup arm motion.	1. Horizontal defects.	(a) Check pickup arm return locator (95) for tightness. (b) Check that pickup arm return spring (87) is not weak and is hooked up properly. (c) Check that fiber washer (95A) is installed under pickup arm return locator.
	2. Vertical defects.	(a) Lift pin (35) binding; clean out dirt and lubricate. (b) Slide and cam (120) binds; check bearing points - - clean and lubricate. (c) Burrs in main slot in slide and cam (120) - - remove with fine file. (d) Ejector lever on ejector bracket assembly (117) binding in slide and cam slot: straighten, remove burrs, and lubricate. (e) Pickup arm shaft and sleeve binding: clean and lubricate.
Noise during change cycle.	1. Tines on the forked end of the slide and cam assembly (120) bent.	Replace.
	2. Control lever bent.	Straighten or replace. Check that "C" washer (95) holds.
	3. Lack of lubrication Grinding noise.	Lubricate ejector lever (117) where it contacts lower end of spindle (3).
Control knob does not detent on "33," "45," or "78" positions.	1. Bent parts.	(a) Insure that forked shaped stamping under idler is not catching in detent notch. Straighten or replace motor. (b) Insure that speed control arm (126) and speed control rod (77) are not bent.
Cartridge drags on record.	1. Needle bent.	Replace.

TROUBLE CHART - Cont.

SYMPTOM	CAUSE	REMEDY
	2. Cartridge mounting screws loose.	Tighten.
Shuts off when last record drops.	1. Shut-off spring (115 and link (112) too short.	Check length of shut-off spring (115) and shut-off link (112) by comparing with another set - - may be too short. Replace.
	2. Shut-off bracket (113) bent.	Straighten or replace.
	3. Shut-off link (112) bent.	Straighten or replace.
	4. Shut-off lever assembly (102) binding.	(a) Check for burrs: remove with fine file. (b) Check for tight bearings: clean and lubricate.
Will not play manually.	1. Trip link (110) bent.	Straighten or replace.
	2. Trip finger cam (105) bent.	Straighten or replace.
Impossible to adjust set-down.	1. Pickup arm shaft and sleeve assembly (43) defective.	Shift the safety plate (39) toward the eccentric set-down adjusting screw (41), and tighten pickup arm shaft and sleeve nut (36). Hold pickup arm against rear stop and push on trip finger cam (105). The safety plate (39) should move away from the set-down adjusting screw (41) and snap back when the trip finger cam (105) is released: if it does not, replace the pickup arm shaft and sleeve assembly (43). Hinge pivot screws may be adjusted favoring one side or the other.
Record does not drop when changer cycles.	1. Spindle pusher shaft and housing assembly (14) broken.	If the pusher shaft (inside the spindle) is broken, the lower end (housing) will drop out of the spindle (7) (see Figure 5). Loosen spindle nut (78) and remove spindle (3). Replace with new spindle unit.
	2. Record pusher (6) in spindle not moving far enough forward to reject a record.	The record pusher should move up inside the spindle body (7), then move forward until it has reached a point flush with, or a maximum of, .010" beyond the spindle body(7). To insure that the record pusher (6) is all the way forward, the lower button on the shaft and housing assembly (14) should be raised high enough by the ejector lever to slightly compress the pusher spring inside the pusher shaft and housing assembly (14). (See "Turntable Stalls During Cycle.") If the spring is compressed and the record pusher (6) does not move far enough forward to eject a record, the spindle (3) should be replaced. If a record is not pushed completely off the ledge, it may hang on the spindle momentarily, then drop on the pickup arm when it moves in over the turntable.
	3. Record pusher (6) raises outside the spindle body (7).	When changer cycles, the record pusher (6) should rise up just inside the spindle body, then move forward inside the center hole in the record. If the record pusher (6) rises outside the spindle body (7), it will raise the record instead of pushing it off the spindle ledge. Remove the spindle (3) and replace with a complete new spindle assembly.
Two records drop at once (refer to exploded view and Figure 5).	1. Hole in record too large.	Check the diameter of the hole in the record. An oversize hole will cause two records to drop at once.
	2. Spindle guide (4) not fully down.	If the spindle guide is not all the way down, more than one record may be dropped at a time.

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SYMPTOM	CAUSE	REMEDY
		(a) Check the guide to be sure it is free and does not bind at any point. Clean out foreign matter or straighten if necessary. Do not oil. (b) When records are placed on the spindle, be sure the guide is all the way down. The guide will normally raise as a record is being dropped, but it should return to place immediately, by gravity.
	3. Record support (1) binding on spindle, or bent out of square with shaft.	The record support (1) must be able to slide freely, by gravity, down the spindle. If the support does not follow the records down as they are being ejected, two or more records may be ejected at once. If binding occurs: (a) Check the spindle (3) to determine if it is straight. Bend carefully with the fingers, if necessary. (b) Straighten the record support (1) if it is not square with the record support shaft. (c) When the pin in the record support shaft has just entered the slot in the record support shaft post on the baseplate, the play in the record support (1), as it is swung from side to side, should be equal on both sides of the spindle. To correct bent condition, hold the support shaft and carefully force the record support into proper position. If the support is loose on the shaft, remove the knob and restake with hammer and punch.
	4. Record pusher (6) defective.	The record pusher (6) may be deformed, etc. This may cause two records to drop at once. Replace with new pusher or replace spindle assembly.
	5. Slide play in spindle (3).	Tighten spindle nut (78). If stripped, replace.
Record hits pickup arm (refer to exploded view).	1. Record pusher (6) not moving far enough forward to eject record.	(See "Record Does Not Drop When Changer Cycles" -2.)
	2. Record pusher (6) extending beyond outside diameter of spindle.	Cycle changer, by hand, until pusher shaft and housing assembly (14) is at the top of its travel. Using new record as a gauge, pass it over the spindle to see if it binds at any point. File off high points on record pusher (6), with a fine file, until record will pass freely over spindle.
	3. Pickup arm not adjusted properly.	(See "Adjustments")
Needle does not set down on 10" record in proper position (refer to exploded view).	1. Pickup arm not adjusted properly.	(See "Adjustments") (a) Loose nut (36) on pickup arm shaft and sleeve (43).
	2. Pickup arm shaft and sleeve (43) binding.	File off burrs and rough surfaces. Polish and lubricate shaft.
	3. 7" set-down lever (90) and 12" record selector (42) not operating properly.	Insure that the proper operation and reset of the 7" set-down lever (90) and 12" record selector (42) is not being interfered with.
	4. Needle bent.	Replace with new needle.
	5. Wire spring (83) broken.	12" record selector (42) does not cock: check for broken 12" record selector spring (83).

TROUBLE CHART - Cont.

SYMPTOM	CAUSE	REMEDY
	6. Bent pickup arm return locator (95).	Straighten or replace.
	7. Bent trip finger cam (105).	Straighten or replace.
Needle does not set down on 12" record in proper position (refer to exploded view).	1. Diameter of 12" record undersize.	The set-down position of the needle for 12" records is determined by the edge of the record striking the 12" record selector (42). If a 12" record has a diameter of less than the standard size of 11-7/8", plus or minus 1/32", it may fail to depress the 12" record selector far enough.
	2. Enlarged center hole in record.	An enlarged center hole might fail to set the 12" record selector because it could produce the same effect as a small record.
	3. Pickup arm not adjusted properly	(See "Adjustments") (a) Loose nut (36) on the pickup arm shaft and sleeve (43). Tighten.
	4. Binding of pickup arm shaft and sleeve (43).	Clean and polish shaft (43), and lubricate with light oil.
	5. Reset lever spring (82) broken.	Replace spring (82).
	6. 12" record selector spring (83) broken.	Replace spring (83).
	7. 12" record selector (42) binding.	The 12" record selector must be free to operate smoothly. Clean out dirt and straighten if bent, or replace.
	8. Bent pickup arm return locator (95).	Straighten or replace.
	9. Bent trip finger cam (105).	Straighten or replace.
Needle does not set down on 7" record properly.	1. 7" set-down lever spring(99) broken or weak.	Replace.
	2. Pickup arm not adjusted properly.	(See "Adjustments") (a) Loose nut (36) on pickup arm shaft on sleeve: tighten.
	3. 7" set-down lever screw (101) loose.	Tighten.
	4. 7" set-down lever (90) hitting frame or baseplate when it goes through hole in frame.	Straighten, or replace.
	5. Reset lever (81) bent.	Replace.
	6. 7" set-down lever (90) does not fall into opening in main gear.	Replace.
	7. Bent pickup arm return locator (95).	Straighten, or replace.

SYMPTOM	CAUSE	REMEDY
	8. Bent trip finger cam (105).	Straighten, or replace.
Changer does not cycle when record has been played.	1. No finishing trip groove on record.	Check record for eccentric trip groove in center of record. Some old records and home recordings do not have this eccentric trip groove.
	2. Needle jumps out of grooves in record.	(a) Check trip pressure: the lateral pressure should not exceed 3 grams. (If pressure is excessive, see "Changer Trips Before Needle Reaches End of Record.")
		(b) The record may be defective: the finishing groove is often too shallow. Check with a record that is known to be good.
		(c) The needle point may be damaged or affected by an excessive accumulation of dust, lint, etc.: check needle pressure as described under "Adjustments."
		(d) There may be binding in the pickup arm shaft and sleeve assembly (43) or between the pickup arm return locator (95) and the trip finger cam (105): see "Needle Does Not Track Properly Across Record.")
	3. Trip pawl (67) binding on gear face.	The trip pawl must be free to move forward and engage the boss on the turntable hub when the trip lever releases it. Check for burrs or foreign matter lodged between the trip pawl (67) and main gear (62). Do not oil as this might collect dirt and gum up the pawl.
	4. Trip finger cam (105) bent.	Straighten, or replace.
	5. Trip link (110) bent.	Straighten, or replace.
Changer trips before needle reaches end of record.	1. Hole in record too large.	If the hole in the record is too large, the groove may turn eccentric with the spindle and cause premature tripping.
	2. Binding of trip link (110).	With the trip link released, check the trip link for freedom of motion. It should be free to move without binding.
Needle does not track across record properly.	1. Needle may be clogged by accumulation of lint, dirt, etc., or worn.	(a) Clean foreign material from around needle (105).
		(b) Check needle to see if the tip is bent or broken. Replace, if necessary. (Refer to paragraph on "Damaged Needle.")
	2. Trip finger cam (105) does not disengage from the pickup arm return locator (95) when cycle is completed.	There should be a 1/32" gap between the trip finger cam (105) and the pickup arm return locator (95) when the machine is not in cycle. If the gap is small enough to allow the parts to touch and bind as the needle moves across the record, the compression spring washer (97) may be weak or broken. Replace.
	3. Check the bearing in the pickup arm post for binding.	(a) Check pickup arm return locator (76) and trip finger cam (80) for binding. (See 2 above.)
	4. Changer not level.	(See "Leveling Record Changer During Long Play" under "Preparation for Operation.")
	5. Pickup leads too tight.	Give the pickup leads enough slack to allow the tone arm to move freely across a record.

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CARTRIDGES

1. Damaged Cartridge (Astatic LQD)

To remove the cartridge, proceed as follows:

(a) Rotate the cartridge so the cartridge mounting screw (28) is facing downward.

(b) Loosen the set screw (26) and remove the cartridge control knob (27).

(c) Carefully pull the cartridge lead up from the rear section of the arm until adequate slack is obtained.

(d) Remove the cartridge mounting screw (28).

(e) Disconnect the pickup leads and remove cartridge.

(f) Replace cartridge and connect pickup leads.

(g) Secure pickup cartridge to mounting bracket (18).

(h) Replace the cartridge control knob (27) and tighten set screw (26).

(i) Push excess pickup lead into rear section of pickup arm.

Damaged Needle (Astatic LQD)

(a) Rotate cartridge control knob to correspond with needle to be removed.

(b) The needle may now be removed by pulling it straight out of its mounting.

(c) In replacing the new needle, make sure that the colored needle is used on the side of the pickup cartridge having the corresponding color spot.

2. Damaged Cartridge (Shure P-81)

(a) Disconnect the pickup leads.

(b) Loosen the two cartridge mounting screws and remove cartridge.

(c) Replace cartridge and connect leads.

Damaged Needle (Shure P-81)

(a) Loosen knurled thumb nut that secures needle to the cartridge.

(b) Carefully remove needle and replace with a new needle of the same part number.

CAUTION: The replacement needle will have to be adjusted, before it is tightened in the pickup cartridge, to assure that the needle shank is securely held by the knurled thumb nut. Do not use pliers on knurled thumb nut. Tighten with fingers only.

3. Damaged Cartridge (Shure P-77)

(a) Rotate the cartridge so the cartridge mounting screws may be loosened.

(b) Remove the cartridge control knob (27).

(c) Carefully pull the cartridge lead up from the rear section of the arm until adequate slack is obtained.

(d) Disconnect the leads and remove the cartridge.

(e) Replace the cartridge and connect the pickup leads.

(f) Secure the cartridge to the mounting bracket (strengthener) (29).

(g) Push excess pickup lead into rear section of pickup arm and re-install plastic cartridge control lever.

Damaged Needle (Shure P-77)

(a) Rotate the cartridge control knob to the position corresponding to the type needle to be replaced.

(b) Loosen the knurled thumb nut that secures needle to the cartridge.

(c) Carefully remove needle and replace with a new needle of the same part number.

CAUTION: Make sure that the colored needle is used on the side of the pickup cartridge having the corresponding color spot. The replacement needle will have to be adjusted, before it is tightened in the pickup cartridge, to assure that the needle shank is securely held by the knurled thumb nut. Do not use pliers on knurled thumb nut. Tighten with fingers only.

ASTATIC CARTRIDGES

2753 Cartridge, Astatic LQD-1M complete
- 2754 Osmium one mil needle
- 2755 Osmium three mil needle

3137 Cartridge, Astatic LQD-1JM complete
- 2755 Osmium three mil needle
- 3135 Sapphire one mil needle

3168 Cartridge, Astatic LQD-1J complete
- 3135 Sapphire one mil needle
- 3136 Sapphire three mil needle

2816 Cartridge, Astatic LQD-1M not grounded complete
- 2754 Osmium one mil needle
- 2755 Osmium three mil needle

2876 Cartridge, Astatic CQ complete
- 3521 Sapphire one mil needle

2500 Cartridge, Astatic CQ ungrounded complete
- 3709 Sapphire one and one-half mil needle

3560 Cartridge, Astatic GCAG complete
- 3561 Osmium truncated needle

3547 Cartridge, Astatic GCAG complete
- 3559 Sapphire truncated needle

SHURE BROTHERS CARTRIDGES

2606 Cartridge, Shure Brothers, P-77 complete
- 2628 Osmium one mil needle
- 2629 Osmium three mil needle

3063 Cartridge, Shure Bros., 79-V complete
- 2629 Osmium three mil needle
- 3120 Sapphire one mil needle

3182 Cartridge, Shure Bros., P-76-A complete
- 3119 Sapphire three mil needle
- 3120 Sapphire one mil needle

3366 Cartridge, Shure Bros., P-71-A complete
- 3367 Sapphire Unipoint needle

3368 Cartridge, Shure Bros., P-37-C complete
- 3369 Osmium Unipoint Needle

3373 Cartridge, Shure Bros., P-81 complete
- 3374 Osmium Unipoint needle

3411 Cartridge, Shure Bros., P-81 complete
- 3412 Sapphire Unipoint needle

3415 Cartridge, Shure Bros., P-81-C complete
- 3369 Osmium two mil needle

3455 Cartridge, Shure Bros., P-76-AF complete
- 3120 Sapphire one mil needle
- 2629 Osmium three mil needle

3442 Cartridge, Shure Bros., P-72-V complete
- 2628 Osmium one mil needle
- 2629 Osmium three mil needle

3553 Cartridge, Shure Bros., P-37-D complete
- 3567 Osmium Unipoint needle

3579 Cartridge, Shure Bros., P-37-A complete
- 3412 Sapphire Unipoint needle

3691 Cartridge, Shure Bros., P-76-A complete
- 2628 Osmium one mil needle
- 2629 Osmium three mil needle

3719 Cartridge, Shure Bros., P-81-A complete
- 3720 Osmium 2.3 mil needle

PROPERTY OF
L. F. BLANKENSHIP
3924 MEADE ST.
DENVER, COLORADO

WEBSTER CARTRIDGES

2197 Cartridge, Webster F-14-2 complete
- 2630 Duo Needle, Osmium tip

3239 Cartridge, Webster A-1 complete
- 3292 Sapphire one mil needle
- 3293 Sapphire three mil needle

3399 Cartridge, Webster A-1M complete
- 3400 Osmium one mil needle
- 3401 Osmium three mil needle

3555 Cartridge, Webster A-1M-Z complete
- 3292 Sapphire one mil needle
- 3401 Osmium three mil needle

PARTS LIST

Prices subject to change without notice.

Ref. No.	Part No.	Description		Ref. No.	Part No.	Description	
1	2908-A	Record Support Assembly - Consists of		38	2937	Washer 1/4 I.D. x 1/2 O. D. x 1/16"	
1A		3286-P Plastic Button		39	2249	Safety Plate	
1B		2902-J Record Support Arm		40	2294	Hinge Assembly	
1C		2530 Record Support Rod			2933	Hinge Pin	
2	2528-A	Turntable and Hub Assembly			2505	Hinge Bracket Only	
3	2576	Spindle and Bearing Assembly - Consists of		41	2269	Eccentric Set-Down Adjustment Screw (Part of Item 40)	
		2536 Spindle Assembly less Ball Race and Washers		41-A	2926	Speed Nut	
4		2128 Spindle Guide		42	2957	12" Record Selector	
5		1535 Pin for Spindle Guide		43	2921	Tone Arm Shaft and Sleeve	
6		1529 Record Pusher		43-A	2952	Fiber Washer	
7		2537 Spindle Body and Base Assembly		44	409	Screw 10-24x5/16" - Casting Hold-down and Lockwasher	
8		2078 Retaining Ring					
9		2639 Bearing Washer		45	2558-G	Tone-Arm Rest Post	
10		2624 Bearing (Ball Race)		46	2907	Reject Knob	
11		2639 Bearing Washer		47	1651	"C" Washer - Switch Control	
12		1527 Pusher Spring		48	2906-G	Speed Control Knob	
13		2552 Pusher Shaft Spring		49	2594	"C" Washer - Switch Control	
14		2539 Pusher Shaft and Housing Assembly		50	2593	Control Shaft Bearing	
15	2310	Hinge Pivot Screw		51	2523	Base Plate	
16	2503-B	Plastic Tone Arm		52	1588	"C" Washer - 12" Record Selector	
17	2508	Hinge Spring		53	2600	Shut-off Rod	
18	2945	Strengthener and Bracket Assembly		54	2442	Trip Spring - Control Link	
19	2275	Strengthener Screw #4 x 1/4" Thread Cutting		55	1721	Reject Spring - Shut-off Rod	
20	2255	Lock Spring		56	2221	Fiber Washer - Main Gear Assembly	
21	2912	Lift Screw		57	1719	"C" Washer - Main Gear Assembly	
22	2449	Screw for Slide 6-32 x 1/8"		58	2525	Die-Cast Frame	
23	2934	Adjusting Slide		59	2077	Shipping Bolt	
24	2275	Strengthener Screw #4 x 1/4" Thread Cutting		60	2918	Plastic Support Leg	
25	2753	Cartridge "Astatic LQD" (Also see Cartridge Breakdown)		61	2110	"C" Washer - Record Support Assembly	
				62	2575	Main Gear Assembly - Consists of:	
26	2370	Cartridge Control Knob Screw				2512 Gear Only	
27	2860-G	Cartridge Control Knob		63		1588 "C" Washer - Trip Lever Assembly	
28	2817	Lockwasher and Screw-Cartridge Mounting		64		2829 Fiber Washer - Trip Lever Assembly	
29	2509	Strengthener and Bracket Assembly		65		2940 Pawl Lever	
30	3691	Cartridge "Shure P-76V" (Also see Breakdown on Cartridges)		66		2516 Spring Washer - Trip Lever Assembly	
				67		2939 Trip Pawl	
31	2542-B	Plastic Tone Arm Assembly Only		68		2569 Trip Lever Assembly	
32	2917	Strengthener and Bracket Assembly		69		2943 Rivet for Pawl Lever	
33	3373	Cartridge "Shure P-81" (Also see Cartridge Breakdown)		70		2977 Roller	
				71		2227 Rivet for Roller	
34	2904	Cartridge Mounting Screw		72	3361	Hairpin Clip - Idler Wheel	
35	2220	Lift Pin		73	2583	Fiber Washer - Idler Wheel	
36	1975	Pal Nut		74	3353	Idler Wheel	
37	2247	Safety Spring		75	2727	Gen. Ind. 2-belt Motor 110 Volt 60 Cycle	

PARTS LIST - Cont.

Ref. No.	Part No.	Description		Ref. No.	Part No.	Description	
	2772	Idler Wheel			3491	Felt Washer for Idler Wheel	
	2773	Mounting Grommet				Note: Above Parts may also be used to service:	
	2765	Lever Grommet					
	2797	Belt			3478	Alliance Turret Motor 110 Volt 50 Cycle	
	3088	Idler Spring			3498	Alliance Turret Motor 220 Volt 50 Cycle	
	3089	Pulley 45 RPM		76	1685	Motor Fastener	
	3090	Pulley 33-1/3 RPM		77	2942	Motor Speed Control Rod	
	3294	Hairpin Clip-Idler		78	2208	Pal Nut for Spindle	
	3295	Fibre Washer-Idler		79	2087	Screw 6/32 x 1/4" Reset Lever	
	3355	Felt Washer-Pulley		80	492	Washer - Flat Steel-Reset Lever	
		Note: Above parts may also be used to service:		81	2560	Reset Lever	
				82	2925	Spring - Reset Lever	
	3321	Motor (110 Volt 50 Cycle)		83	2563	Spring - 12" Record Selector	
	3322	Motor (220 Volt 50 Cycle)		83-A	1720	Speed Nut - Spring - 12" Record Selector	
				84	409	Screw 1-/24 x 5/16 and Lockwasher	
	3129	General Industries Turret Motor 110 Volt 60 Cycles		85	2951	Terminal Strip	
				86	2087	Screw 6/32 x 1/4	
	3139	Pulley 78 RPM		87	2574	Return Spring-Pickup Arm	
	3140	Pulley 45 RPM		88	2284	Control Shaft Assembly	
	3141	Pulley 33-1/3 RPM		88-A	1652	"C" Washer for Item 88	
	2772	Idler Wheel		89	2580	Rubber Bumper	
	2773	Mounting Grommet		90	2581	7" Set-down Lever	
	2765	Lever Grommet		91	467	Switch	
	3088	Idler Spring		92	2931	Fiber Insulating Strip	
	3294	Hairpin Clip-Idler		93	2573	Switch Cover	
	3295	Fibre Washer-Idler		94	1720	Speed Nut - Switch Cover Hold-down	
	3355	Felt Washer-Pulley		95	2561	Locator Plate - Tone-Arm Return	
		Note: Above parts may also be used to service:		95-A	2266	Fiber Washer	
				96	2271	Retaining Ring - Locator Plate	
				97	2953	Spring Washer	
	3395	Motor (110 Volt 50 Cycle)		98	2585	Spring Shut-Off Lever	
	3396	Motor (220 Volt 50 Cycle)		99	2579	Spring - 7" Set-down Lever	
				100	492	Washer - Flat Steel - 7" Set-down Lever	
	3211	Russel Turret Motor 110 Volt 60 Cycle		101	2087	Screw 6/32 x 1/4" - 7" Set-down Lever	
	3353	Idler Wheel		102	2591	Lever Assembly - Shut-off	
	3354	Pulley 33-1/3 RPM		103	1587	Lever Assembly Bearing	
	3356	Pulley 45 RPM		104	2932	Screw 4/40 Hex Head	
	3357	Pulley 78 RPM		105	2520	Trip Finger Cam	
	3358	Idler Arm & Pivot Assembly		106	1975	Pal Nut	
	3359	Idler Arm Link		107	2262	Conical Lift Pin Spring	
	3360	Idler Spring		108	1588	"C" Washer - Lift Pin Spring	
	3361	Hairpin Clip Idler		109	1588	"C" Washer - Slide Retainer	
	2638	Mounting Grommet		110	2958	Trip Link	
	3362	Felt Washer-Pulley		111	2245	Rivet-Trip Link	
	3363	Fibre Washer-Idler		112	2935	Control Link	
	2765	Lever Grommet		113	2586	Shut-off Bracket Assembly	
				114	2053	Screw 6 x 5/16	
		Note: Above parts may also be used to service:		115	2978	Shut-off Spring	
				116	409	Screw 10/24 x 5/16 and Lockwasher	
	3393	Motor (110 Volt 50 Cycle)		117	2571	Ejector Link Assembly	
	3394	Motor (220 Volt 50 Cycle)		118	2274	Flat Washer	
	3338	Alliance Turret Motor 110 Volt 60 Cycle		119	2087	Screw 6/32 x 1/4 Slide and Cam Assembly	
	3481	Idler Wheel		120	2288	Slide and Cam Assembly	
	3489	Mounting Grommet		121	2211	Slide Bearing	
	3487	Idler Spring		122	2246	Spring - Slide Bearing	
	3484	Pulley 78 RPM		123	2208	Pal Nut	
	3483	Pulley 45 RPM		124	2909	Washer	
	3482	Pulley 33-1/3 RPM		125	2597	Control Shaft Assembly - Motor	
	3488	"C" Washer for Idler Wheel		126	2765	Rubber Grommet	
	3493	Fibre Washer for Idler Wheel		127	2910	Compression Spring	
	3492	Fibre Washer for Pulleys		128	2599	Switch Control Lever Assembly	
	3490	Felt Washer for Pulley		129	2087	Screw 6/32 x 1/2"	